

Soil Survey of

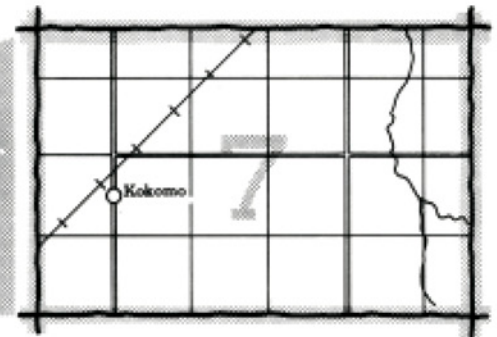
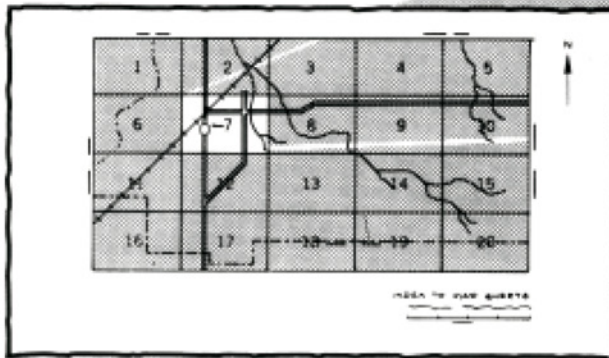
# Lamoille County, Vermont

United States Department of Agriculture, Soil Conservation Service  
in cooperation with  
Vermont Agricultural Experiment Station and  
Vermont Agency of Environmental Conservation



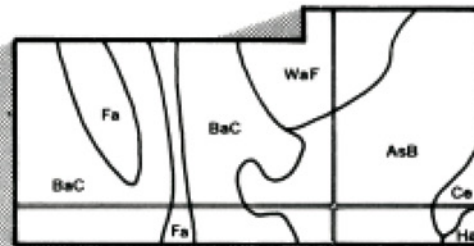
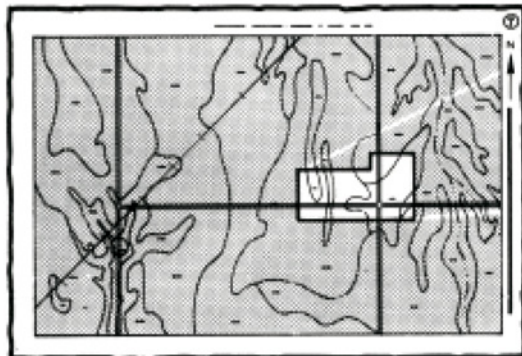
# HOW TO USE

1. Locate your area of interest on the "Index to Map Sheets"

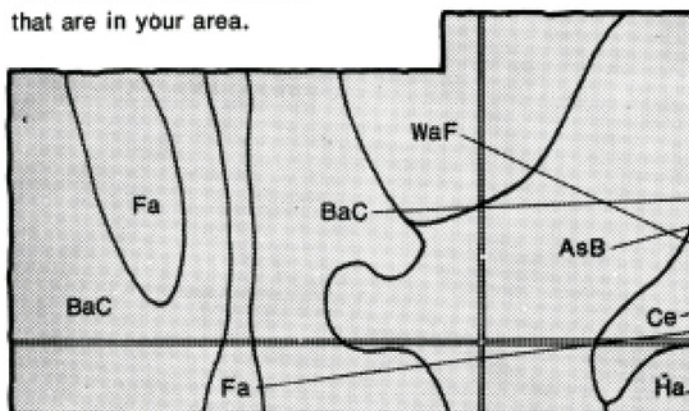


2. Note the number of the map sheet and turn to that sheet.

3. Locate your area of interest on the map sheet.



4. List the map unit symbols that are in your area.



## Symbols

AsB

BaC

Ce

Fa

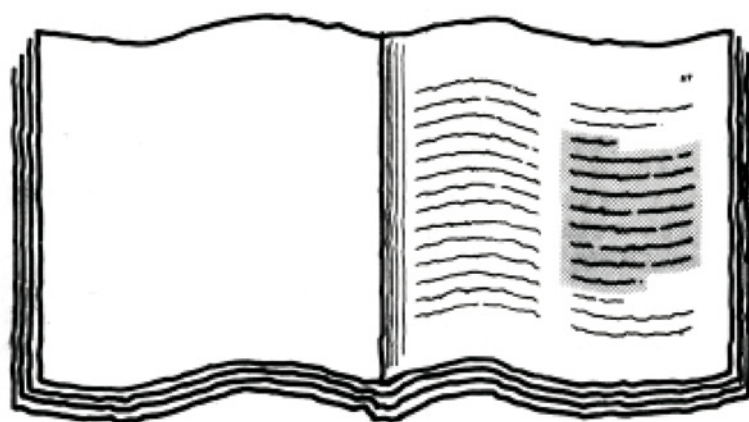
Ha

WaF



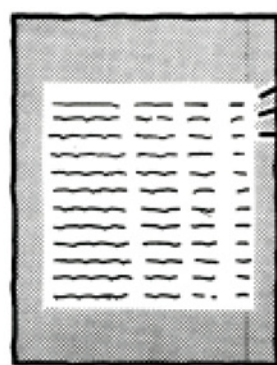
# THIS SOIL SURVEY

5. Turn to "Index to Soil Map Units" which lists the name of each map unit and the page where that map unit is described.



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15 pages (600 lines)	\$60,000.00	15 pages (600 lines)	\$60,000.00
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17 pages (680 lines)	\$68,000.00	17 pages (680 lines)	\$68,000.00
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19 pages (760 lines)	\$76,000.00	19 pages (760 lines)	\$76,000.00
20 pages (800 lines)	\$80,000.00	20 pages (800 lines)	\$80,000.00
21 pages (840 lines)	\$84,000.00	21 pages (840 lines)	\$84,000.00
22 pages (880 lines)	\$88,000.00	22 pages (880 lines)	\$88,000.00
23 pages (920 lines)	\$92,000.00	23 pages (920 lines)	\$92,000.00
24 pages (960 lines)	\$96,000.00	24 pages (960 lines)	\$96,000.00
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28 pages (1,120 lines)	\$112,000.00	28 pages (1,120 lines)	\$112,000.00
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36 pages (1,440 lines)	\$144,000.00	36 pages (1,440 lines)	\$144,000.00
37 pages (1,480 lines)	\$148,000.00	37 pages (1,480 lines)	\$148,000.00
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39 pages (1,560 lines)	\$156,000.00	39 pages (1,560 lines)	\$156,000.00
40 pages (1,600 lines)	\$160,000.00	40 pages (1,600 lines)	\$160,000.00
41 pages (1,640 lines)	\$164,000.00	41 pages (1,640 lines)	\$164,000.00
42 pages (1,680 lines)	\$168,000.00	42 pages (1,680 lines)	\$168,000.00
43 pages (1,720 lines)	\$172,000.00	43 pages (1,720 lines)	\$172,000.00
44 pages (1,760 lines)	\$176,000.00	44 pages (1,760 lines)	\$176,000.00
45 pages (1,800 lines)	\$180,000.00	45 pages (1,800 lines)	\$180,000.00
46 pages (1,840 lines)	\$184,000.00	46 pages (1,840 lines)	\$184,000.00
47 pages (1,880 lines)	\$188,000.00	47 pages (1,880 lines)	\$188,000.00
48 pages (1,920 lines)	\$192,000.00	48 pages (1,920 lines)	\$192,000.00
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51 pages (2,040 lines)	\$204,000.00	51 pages (2,040 lines)	\$204,000.00
52 pages (2,080 lines)	\$208,000.00	52 pages (2,080 lines)	\$208,000.00
53 pages (2,120 lines)	\$212,000.00	53 pages (2,120 lines)	\$212,000.00
54 pages (2,160 lines)	\$216,000.00	54 pages (2,160 lines)	\$216,000.00
55 pages (2,200 lines)	\$220,000.00	55 pages (2,200 lines)	\$220,000.00
56 pages (2,240 lines)	\$224,000.00	56 pages (2,240 lines)	\$224,000.00
57 pages (2,280 lines)	\$228,000.00	57 pages (2,280 lines)	\$228,000.00
58 pages (2,320 lines)	\$232,000.00	58 pages (2,320 lines)	\$232,000.00
59 pages (2,360 lines)	\$236,000.00	59 pages (2,360 lines)	\$236,000.00
60 pages (2,400 lines)	\$240,000.00	60 pages (2,400 lines)	\$240,000.00
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62 pages (2,480 lines)	\$248,000.00	62 pages (2,480 lines)	\$248,000.00
63 pages (2,520 lines)	\$252,000.00	63 pages (2,520 lines)	\$252,000.00
64 pages (2,560 lines)	\$256,000.00	64 pages (2,560 lines)	\$256,000.00
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68 pages (2,720 lines)	\$272,000.00	68 pages (2,720 lines)	\$272,000.00
69 pages (2,760 lines)	\$276,000.00	69 pages (2,760 lines)	\$276,000.00
70 pages (2,800 lines)	\$280,000.00	70 pages (2,800 lines)	\$280,000.00
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72 pages (2,880 lines)	\$288,000.00	72 pages (2,880 lines)	\$288,000.00
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77 pages (3,080 lines)	\$308,000.00	77 pages (3,080 lines)	\$308,000.00
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96 pages (3,840 lines)	\$384,000.00	96 pages (3,840 lines)	\$384,000.00
97 pages (3,880 lines)	\$388,000.00	97 pages (3,880 lines)	\$388,000.00
98 pages (3,920 lines)	\$392,000.00	98 pages (3,920 lines)	\$392,000.00
99 pages (3,960 lines)	\$396,000.00	99 pages (3,960 lines)	\$396,000.00
100 pages (4,000 lines)	\$400,000.00	100 pages (4,000 lines)	\$400,000.00

- 6.** See "Summary of Tables" (following the Contents) for location of additional data on a specific soil use.



Variable	Mean	Standard deviation	Minimum	Maximum
Age	34.5	10.5	20	55
Gender	0.5	0.5	0	1
Marital status	0.5	0.5	0	1
Education	12.5	1.5	10	16
Income	15.5	10.5	5	45
Health status	0.5	0.5	0	1
Smoking status	0.5	0.5	0	1
Alcohol consumption	0.5	0.5	0	1
Exercise frequency	0.5	0.5	0	1
Stress level	0.5	0.5	0	1
Depression level	0.5	0.5	0	1
Life satisfaction	0.5	0.5	0	1
Quality of life	0.5	0.5	0	1
Overall health	0.5	0.5	0	1
Physical health	0.5	0.5	0	1
Mental health	0.5	0.5	0	1
Social health	0.5	0.5	0	1
Emotional health	0.5	0.5	0	1
Behavioral health	0.5	0.5	0	1
Environmental health	0.5	0.5	0	1
Occupational health	0.5	0.5	0	1
Financial health	0.5	0.5	0	1
Family health	0.5	0.5	0	1
Community health	0.5	0.5	0	1
National health	0.5	0.5	0	1
Global health	0.5	0.5	0	1

Table 2 — the design to estimate status

Table 2. Classification of the data	
Year	Classification
1990	1990
1991	1991
1992	1992
1993	1993
1994	1994
1995	1995
1996	1996
1997	1997
1998	1998
1999	1999
2000	2000
2001	2001
2002	2002
2003	2003
2004	2004
2005	2005
2006	2006
2007	2007
2008	2008
2009	2009
2010	2010
2011	2011
2012	2012
2013	2013
2014	2014
2015	2015
2016	2016
2017	2017
2018	2018
2019	2019
2020	2020
2021	2021
2022	2022
2023	2023
2024	2024
2025	2025
2026	2026
2027	2027
2028	2028
2029	2029
2030	2030
2031	2031
2032	2032
2033	2033
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2066	2066
2067	2067
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2084	2084
2085	2085
2086	2086
2087	2087
2088	2088
2089	2089
2090	2090
2091	2091
2092	2092
2093	2093
2094	2094
2095	2095
2096	2096
2097	2097
2098	2098
2099	2099

7. Consult "Contents" for parts of the publication that will meet your specific needs. This survey contains useful information for farmers or ranchers, foresters or agronomists; for planners, community decision makers, engineers, developers, builders, or homebuyers; for conservationists, recreationists, teachers, or students; to specialists in wildlife management, waste disposal, or pollution control.

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This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other federal agencies, state agencies including the Agricultural Experiment Stations, and local agencies. The Soil Conservation Service has leadership for the federal part of the National Cooperative Soil Survey. In line with Department of Agriculture policies, benefits of this program are available to all, regardless of race, color, national origin, sex, religion, marital status, or age.

Major fieldwork for this soil survey was performed in the period 1971-78. Soil names and descriptions were approved in 1979. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1979. This survey was made cooperatively by the Soil Conservation Service, the Vermont Agricultural Experiment Station, and the Vermont Agency of Environmental Conservation. The survey is part of the technical assistance furnished to the Lamoille County Natural Resources Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

*Cover: This farm is on a typical area in the Berkshire-Marlow-Peru association. Most of this acreage consists of Marlow and Peru soils.*



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Issued October 1981

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# foreword

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This soil survey contains information that can be used in land-planning programs in Lamoille County. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

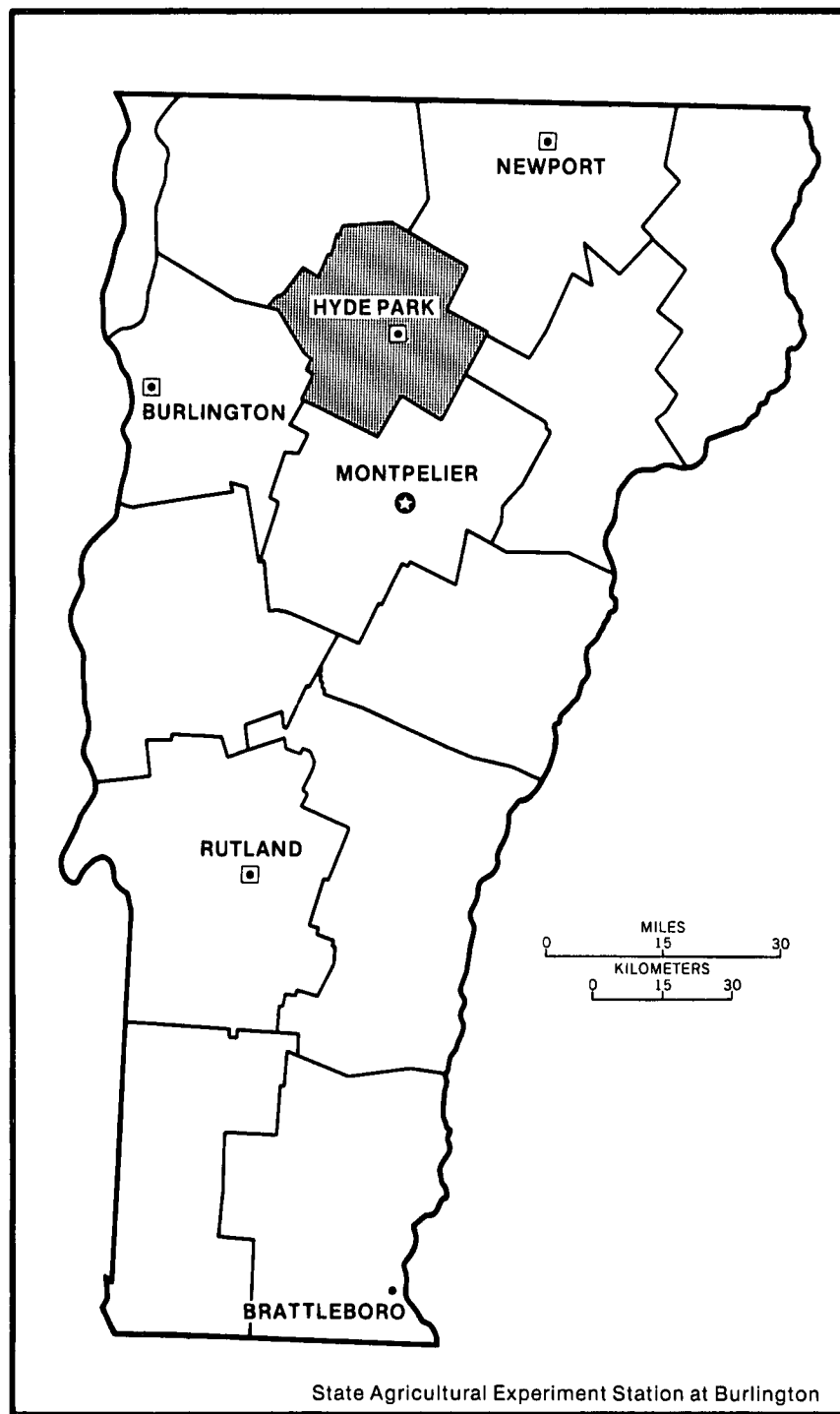
This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to insure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Soil Conservation Service or the Cooperative Extension Service.



Robert R. Shaw  
State Conservationist  
Soil Conservation Service



*Location of Lamoille County in Vermont.*

# soil survey of Lamoille County, Vermont

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Environmental Conservation

United States Department of Agriculture, Soil Conservation Service,  
in cooperation with  
Vermont Agricultural Experiment Station and the  
Vermont Agency of Environmental Conservation

LAMOILLE COUNTY is in the north-central part of Vermont. The county is 303,552 acres, or 474 square miles. The county was incorporated on October 26, 1835. Hyde Park is the county seat.

Most of the acreage in the county is forested; some areas are used for farms or residential development. Most of the farming is in the valleys and on the lower slopes of the Green Mountains. Dairying is the main farm enterprise, and most of the milk produced in Lamoille County is shipped to markets in Boston and New York City.

The transportation needs of the county are served by two main highways, Vermont routes 15 and 100. A local railroad connects the area with some of the larger railways, and a State-owned airport between Stowe and Morrisville provides facilities for air transportation.

The major natural resources in the county include wood from the large forested areas and mined deposits of asbestos and talc. The lakes, mountains, and forests of the county also provide opportunities for recreation, making Lamoille County a center for tourism in New England.

## general nature of the county

Anthony Ciraldi, Executive Director of the Lamoille County Development Council, assisted with the preparation of this and other parts of the survey.

This section provides information about the population of Lamoille County and describes the climate and physiography, relief, and geological characteristics of the county.

## population

Lamoille County has a population of 13,309 spread among ten towns. The town populations range from 189 to 4,052. The decade between 1960 and 1970 showed an increase in population of 14 percent for the State and 21 percent for the county. Most of this increase took place in the larger towns of Morris town, Stowe, Johnson, and Cambridge. The population of the area continued to grow rapidly through 1973, according to the Vermont State Health Department estimates, but growth became stable by 1974.



## physiography, relief, and geology

Lamoille county lies within the Green Mountain and Vermont Piedmont divisions of the New England physiographic province. The Green Mountains comprise the western two-thirds of the county and the Vermont Piedmont the eastern third.

The Green Mountain division trends north-south and is approximately 20 miles wide. The greatest relief occurs in this area; the elevation ranges from a low of 440 feet above sea level to a high of 3,849 feet on Mt. Mansfield. The main crest line of this division is the ridge system that includes Belvidere Mountain, Whiteface Mountain, and Mt. Mansfield. East of the Morrisville-Stowe valley is the Worcester range, a subrange of the Green Mountains; its eastern flank marks the beginning of the Vermont Piedmont. Structurally, this division is a large arch (anticlinorium) with many smaller folds superimposed on the arch.

The Vermont Piedmont follows an indistinct boundary east and north of the Worcester mountain range. It then spreads east to encompass the remainder of the county. It is an area that was once made nearly flat by erosion. Isolated hills and mountains now rise above this old peneplain, and considerable relief has been generated by the downcutting of present day streams. Unlike the Green Mountains, there are no major structures that dominate this division, but rather some local intensive folding and faulting.

The rocks underlying the glacial deposits and soils of the county are a highly metamorphosed, light- to dark-colored mix of mainly schists and phylites and some impure limestone in the Piedmont region. Moderate amounts of greenstone, slate, and quartzite are also in the eastern part of the Green Mountain division. Some small igneous intrusions outcrop in northern Johnson and Eden.

The soils of the Lamoille County uplands are derived from materials that were laid down directly from the ice of the last glacier or indirectly from the ice through the action of streams and the presence of ice-dammed lakes. Some of this glacial debris has been carried downhill by recent streams and redeposited in the lowlands.

The glacial movement in the county generally resulted in the following types and locations of parent material: the uplands are till; some upland valleys have outwash sand and gravel deposited by glacial meltwater; and the low valleys consist mainly of outwash sand and gravel, and some consist of silt and clay where the water was ponded by ice and was quiet enough for this type of deposition.

All drainage in Lamoille County is south or west into Lake Champlain. The Lamoille River is the major river, and it bisects the county from east to west. Many consequent streams flow into the Lamoille; the Wild Branch and the Gihon and Seymour Rivers and the Centerville Brook and Elmore Branch are the largest of

these tributaries. The Waterbury River drains south from Stowe and empties into the Winooski River and then into Lake Champlain. Lake Elmore, Green River Reservoir, and Lake Eden are the largest of the numerous small lakes and ponds in the county.

## climate

Prepared by the National Climatic Center, Asheville, North Carolina.

Winters in Lamoille County are cold, and summers are moderately warm with occasional hot spells. The mountains are markedly cooler than the main agricultural areas in the lowlands. Precipitation is well distributed throughout the year and is nearly always adequate for all crops. Winter snows occur frequently, occasionally as blizzards, and cover the ground much of the time.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Morrisville, Vermont, in the period 1963 to 1975. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter the average temperature is 18 degrees F, and the average daily minimum temperature is 7 degrees. The lowest temperature on record, which occurred at Morrisville on February 13, 1967, is -37 degrees. In summer the average temperature is 66 degrees, and the average daily maximum temperature is 80 degrees. The highest recorded temperature, which occurred at Morrisville on July 3, 1966, is 97 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

Of the total annual precipitation, 22 inches, or 55 percent, usually falls in April through September, which includes the growing season for most crops. In 2 years out of 10, the rainfall in April through September is less than 19 inches. The heaviest 1-day rainfall during the period of record was 3.28 inches at Morrisville on August 28, 1971. Thunderstorms occur on about 25 days each year, and most occur in summer.

Average seasonal snowfall is 114 inches. The greatest snow depth at any one time during the period of record was 50 inches. On an average of 125 days, at least 1 inch of snow is on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 80 percent. The sun shines 60 percent of the time possible in summer and 40 percent in winter. The prevailing wind is from the south. Average windspeed is highest, 10 miles per hour, in winter.

## how this survey was made

Soil scientists made this survey to learn what soils are in the survey area, where they are, and how they can be used. They observed the steepness, length, and shape of slopes; the size of streams and the general pattern of drainage; the kinds of native plants or crops; and the kinds of rock. They dug many holes to study soil profiles. A profile is the sequence of natural layers, or horizons, in a soil. It extends from the surface down into the parent material, which has been changed very little by leaching or by plant roots.

The soil scientists recorded the characteristics of the profiles they studied and compared those profiles with others in nearby counties and in more distant places. They classified and named the soils according to nationwide uniform procedures. They drew the boundaries of the soils on aerial photographs. These photographs show trees, buildings, fields, roads, and other details that help in drawing boundaries accurately. The soil maps at the back of this publication were prepared from aerial photographs.

The areas shown on a soil map are called map units. Most map units are made up of one kind of soil. Some are made up of two or more kinds. The map units in this survey area are described under "General soil map units" and "Detailed soil map units."

While a soil survey is in progress, samples of some soils are taken for laboratory measurements and for engineering tests. All soils are field tested to determine their characteristics. Interpretations of those characteristics may be modified during the survey. Data are assembled from other sources, such as test results, records, field experience, and state and local specialists. For example, data on crop yields under defined management are assembled from farm records and from field or plot experiments on the same kinds of soil.

But only part of a soil survey is done when the soils have been named, described, interpreted, and delineated on aerial photographs and when the laboratory data and other data have been assembled. The mass of detailed information then needs to be organized so that it can be used by farmers, woodland managers, engineers, planners, developers and builders, home buyers, and others.



# general soil map units

---

The general soil map at the back of this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each association on the general soil map is a unique natural landscape. Typically, an association consists of one or more major soils and some minor soils. It is named for the major soils. The soils making up one association can occur in others but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one association differ from place to place in slope, depth, drainage, and other characteristics that affect management.

## soil descriptions

### 1. Udifluvents-Ondawa-Rumney-Podunk association

*Deep, level, excessively drained to poorly drained, loamy soils; on flood plains*

Areas of these soils are on the flood plains of major rivers and streams. The larger areas are near the Lamoille River. Smaller areas are in the valleys of the Gihon and Waterbury Rivers and along the minor streams throughout the county.

This association makes up about 3 percent of the county. The association is about 20 percent Udifluvents, 19 percent Ondawa soils, 17 percent Rumney soils, 15 percent Podunk soils, and 29 percent soils of minor extent.

Udifluvents are excessively drained, and Ondawa soils are well drained. Podunk soils are moderately well drained and are on the lower parts of the landscape; these areas are flooded more frequently than the others in the association. Rumney soils are poorly drained and are flooded during heavy rains and from spring runoff.

The minor soils in this association are well drained Hamlin and Adams soils; moderately well drained Teel and Croghan soils; poorly drained Limerick Variant, Walpole, and Swanville soils; and very poorly drained Histic Fluvaquents.

Most areas of this association have been cleared of trees and are farmed intensively. The main crops are

silage corn, hay, and pasture. The more poorly drained areas are idle or wooded. Flooding is a limitation for crops, especially on the wetter soils.

If properly drained, these soils are suitable for farming. Wetness and the flood hazard are the main limitations for community development. The suitability for woodland is good in the better drained areas and fair to poor in the wetter areas. The potential for wildlife habitat is good.

### 2. Adams-Colton-Duxbury association

*Level to steep, excessively drained and well drained, sandy soils; on deltas, terraces, and old beaches*

Areas of these soils are throughout the county. The larger areas are near the Lamoille River and its tributaries.

This association makes up about 12 percent of the county. The association is about 40 percent Adams soils, 23 percent Colton soils, 14 percent Duxbury soils, and 23 percent soils of minor extent.

The Adams and Colton soils are excessively drained. The Duxbury soils are well drained.

The minor soils in the association are excessively drained to well drained Adams Variant soils; well drained Allagash, Salmon, and Ondawa soils; moderately well drained Croghan and Boothbay soils; somewhat poorly drained and poorly drained Walpole and Swanville soils; and very poorly drained Searsport soils.

This association is used for dairy farming, woodland, and community development. The soils are the main source of sand and gravel in the county. The steeper areas are mainly in woodland. The less sloping areas are used for silage corn and as homesites.

The suitability of these soils for farming is fair; the main management concerns are droughtiness and the necessity for frequent applications of lime and fertilizer.

### 3. Salmon-Boothbay-Swanville association

*Deep, level to steep, well drained to somewhat poorly drained, loamy soils; on old lake plains*

Areas of these soils are on valley floors and walls throughout this county. The larger areas are in the major valleys.

This association makes up about 6 percent of the county. The association is about 37 percent Salmon soils, 30 percent Boothbay soils, 12 percent Swanville soils, and 21 percent soils of minor extent.

The Boothbay soils are moderately well drained, the Salmon soils are well drained, and the Swanville soils are somewhat poorly drained.

The minor soils in the association are excessively drained Colton and Adams soils and poorly drained and somewhat poorly drained Scantic Variant and Walpole soils.

This association is used mainly for silage corn, hay, and pasture. The use of drainage on the wetter soils makes them suitable for farming. The main limitations for community development are the slow permeability of the soils and wetness. The soils are suitable for wildlife habitat and woodland. Slope and wetness are the main concerns for recreational development.

#### 4. Lyman-Tunbridge association

*Shallow and moderately deep, gently sloping to steep, well drained and somewhat excessively drained, loamy*

*soils that have bedrock at a depth of 40 inches or less; on the Green Mountains*

Areas of these soils are on the foothills and middle parts of the Green Mountains. The surface has a few areas of exposed bedrock.

The association makes up about 41 percent of the county. The association is about 43 percent Lyman soils, 34 percent Tunbridge soils, and 23 percent soils of minor extent (fig. 1).

Lyman soils are somewhat excessively drained and are less than 20 inches deep to bedrock. Tunbridge soils are well drained and are 20 to 40 inches deep to bedrock.

The minor soils in the association are well drained Berkshire and Stratton soils, moderately well drained Peru soils, and somewhat poorly drained and poorly drained soils.

This association mainly is used for woodland. A few areas on the lower slopes are used for farming.

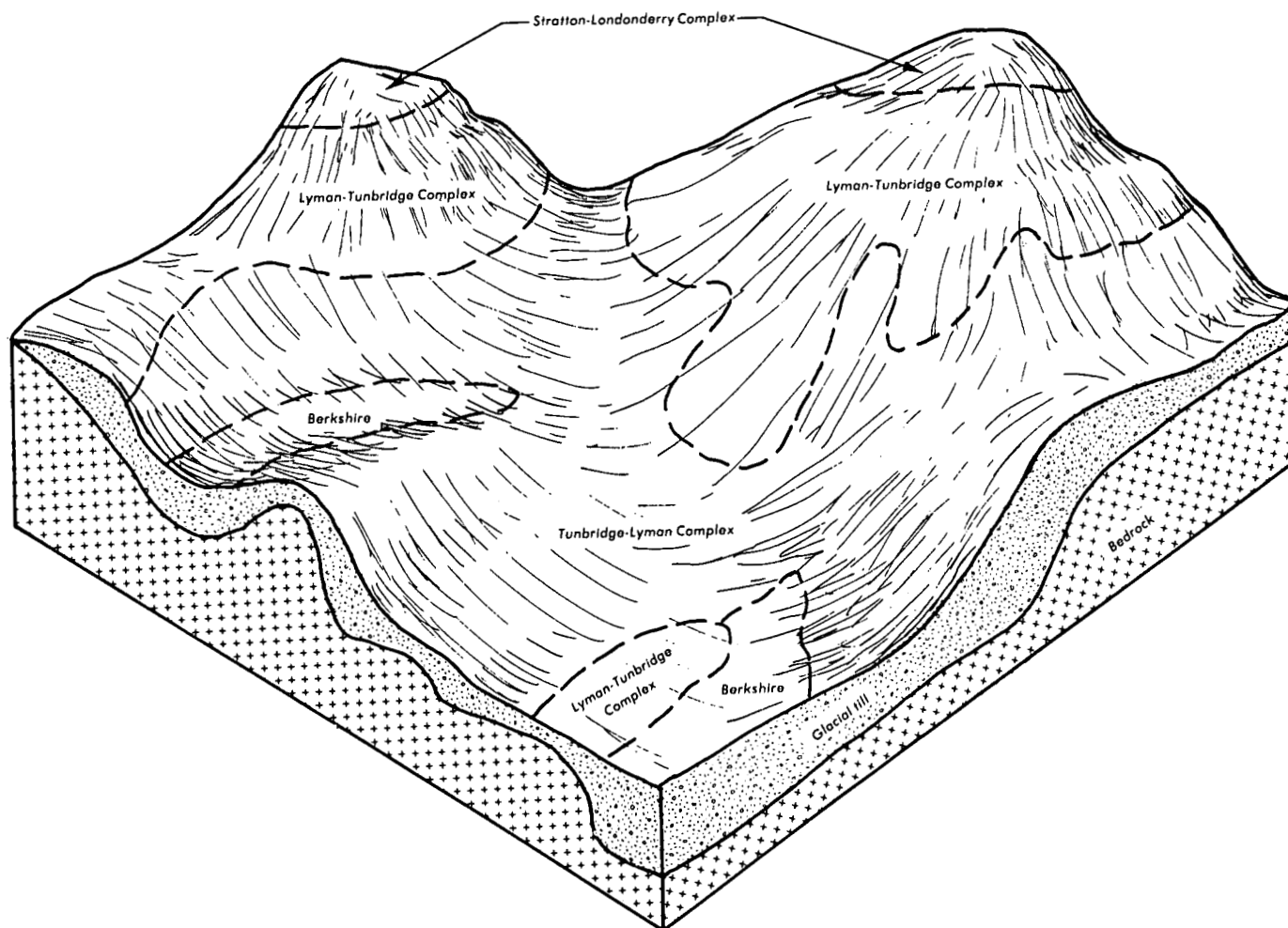


Figure 1.—Typical pattern of soils and underlying material in the Lyman-Tunbridge association.

Slope and the depth to bedrock limit these soils for farming and community development. The soils are suitable for wildlife habitat. They are also suitable for woodland, but the use of equipment is limited.

### 5. Berkshire-Marlow-Peru association

*Deep, level to steep, well drained to somewhat poorly drained, loamy soils; on uplands*

These soils are on broad slopes and in depressions on slopes.

This association makes up about 34 percent of the county. The association is about 34 percent Berkshire soils, 23 percent Marlow soils, 17 percent Peru soils, and 26 percent soils of minor extent (fig. 2).

The Berkshire soils are well drained and are generally at an elevation of less than 1,200 feet. The Marlow soils are well drained and have a hardpan. They are generally at an elevation of more than 1,200 feet. The Peru soils are moderately well drained to somewhat poorly drained and are in slight depressions.

The minor soils in the association are somewhat

excessively drained Lyman soils; well drained Tunbridge and Potsdam soils; and moderately well drained soils, somewhat poorly drained and poorly drained soils, and poorly drained, organic soils.

The soils in this association are used for hay, silage corn, pasture, and trees.

The suitability of the soils for farming is good. The pan in the Marlow and Peru soils and the slope of parts of the Berkshire and Marlow soils are the main limitations for community development. The soils are generally suitable for woodland, wildlife habitat, and recreational development.

### 6. Londonderry-Stratton-Ricker association

*Shallow and very shallow, sloping to very steep, well drained, loamy and organic soils; on the upper slopes of the Green Mountains*

This association makes up about 4 percent of the county. The association is about 45 percent Londonderry soils, 24 percent Stratton soils, 2 percent Ricker soils, and 29 percent soils of minor extent.

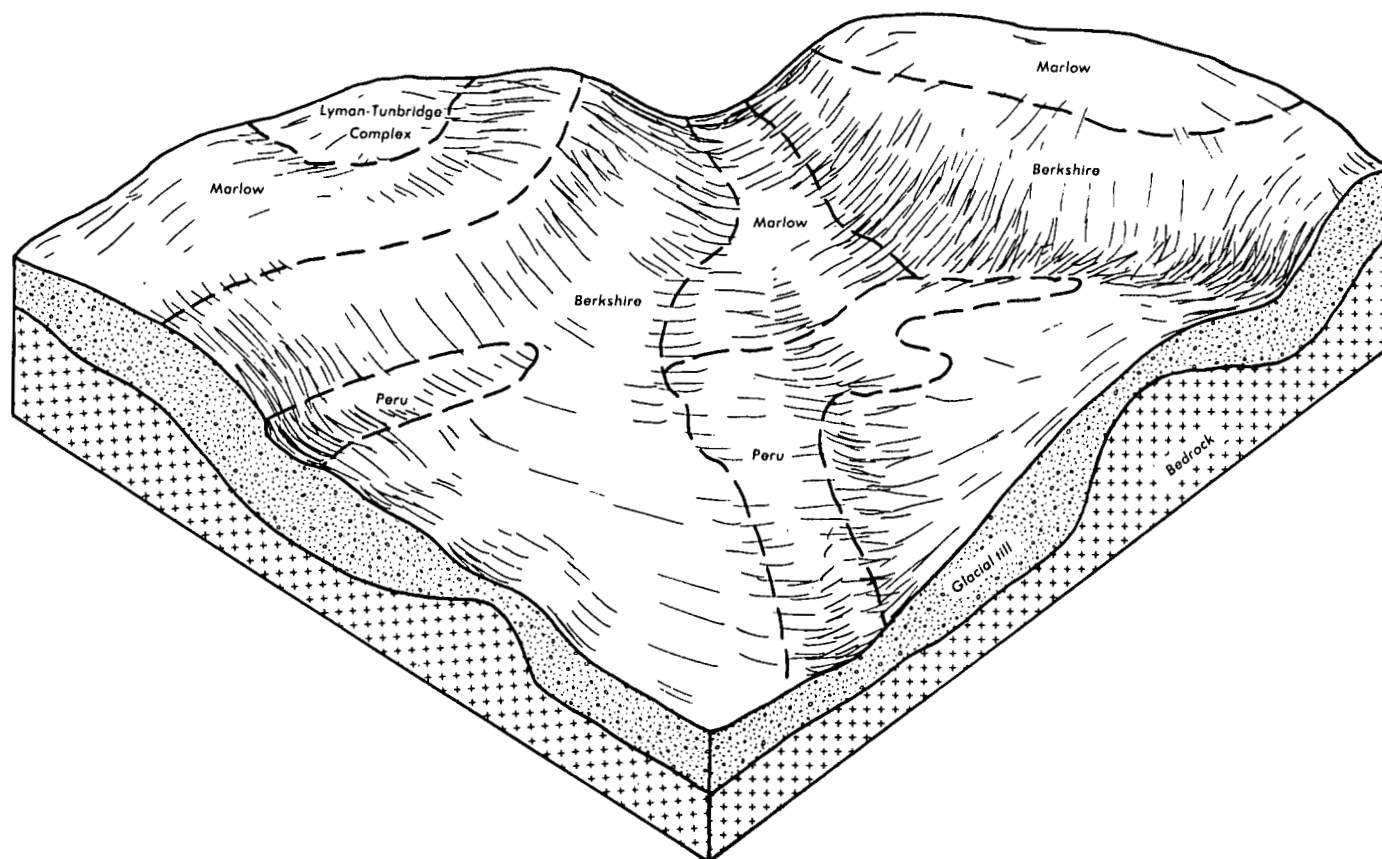


Figure 2.—Typical pattern of soils and underlying material in the Berkshire-Marlow-Peru association.

The Londonderry and Stratton soils are loamy. The Londonderry soils have bedrock at a depth of about 7 inches; the Stratton soils have bedrock at a depth of 10 to 20 inches. The Ricker soils consist of organic material and have bedrock at a depth of about 10 inches.

The minor soils in the association are excessively

drained, shallow Lyman soils and well drained, moderately deep Tunbridge soils.

The areas of this association on lower slopes are used for recreation and limited woodland production. The depth to bedrock and the location of the soils are limitations for most other uses.



## detailed soil map units

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The map units on the detailed soil maps at the back of this survey represent the soils in the survey area. The map unit descriptions in this section, along with the soil maps, can be used to determine the suitability and potential of a soil for specific uses. They also can be used to plan the management needed for those uses. More information on each map unit, or soil, is given under "Use and management of the soils."

Each map unit on the detailed soil maps represents an area on the landscape and consists of one or more soils for which the unit is named.

A symbol identifying the soil precedes the map unit name in the soil descriptions. Each description includes general facts about the soil and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer or of the underlying material, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer or of the underlying material. They also can differ in slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Berkshire fine sandy loam, 3 to 8 percent slopes, is one of several phases in the Berkshire series.

Some map units are made up of two or more major soils. These map units are called soil complexes or undifferentiated groups.

A *soil complex* consists of two or more soils in such an intricate pattern or in such small areas that they cannot be shown separately on the soil maps. The pattern and proportion of the soils are somewhat similar in all areas. Londonderry-Stratton complex, 25 to 60 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils in a mapped area are not uniform. An area can be made up of only one of the major soils, or it can be made up of all of them. Fraguaquepts and Haplaquepts, 0

to 8 percent slopes, is an undifferentiated group in this survey area.

Most map units include small scattered areas of soils other than those for which the map unit is named. Some of these included soils have properties that differ substantially from those of the major soil or soils. Such differences could significantly affect use and management of the soils in the map unit. The included soils are identified in each map unit description. Some small areas of strongly contrasting soils are identified by a special symbol on the soil maps.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of tables") give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils.

### soil descriptions

**AdB—Adams loamy fine sand, 2 to 8 percent slopes.** This soil is well drained to excessively drained and is gently sloping. It is on terraces and deltas. The areas are long and narrow to irregular in shape and range from 10 to 125 acres.

Typically this soil has a surface layer of dark brown loamy fine sand 8 inches thick. The subsoil is dark brown and light olive brown loamy fine sand 16 inches thick. The substratum is olive yellow sand that extends to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Colton, Duxbury, Allagash, Adams Variant, Croghan, and Walpole soils. Some areas have silt loam within 40 inches of the surface, and some have a surface layer of fine sandy loam. Also included are small areas with slopes of less than 2 percent or more than 8 percent. The Colton, Duxbury, Allagash, Adams Variant, Croghan, and Walpole soils make up about 10 percent of the unit. Other included soils make up about 10 to 15 percent.

The permeability of this Adams soil is rapid in the subsoil and very rapid in the substratum. Available water capacity is very low. The root zone extends to a depth of 40 inches. This soil is very strongly acid to medium acid in unlimed areas. Runoff is slow.

This soil is suitable for farming, and much of the acreage is farmed (fig. 3). The main limitation is droughtiness. This soil can be worked from early in the spring until late in the fall. Using grasses and legumes in the crop rotation, stripcropping, and using cover crops

help to control erosion and maintain tilth. Cover crops are especially needed if continuous corn is grown. Crops and pastures on this soil respond well to lime and fertilizer.

The prevention of overgrazing is a major pasture management concern; pasture rotation is the main management practice. Redtop, smooth brome, fescue, and ladino clover are the suitable species to plant.

This soil is suitable for woodland, and some of the acreage is wooded. The droughtiness of the soil causes a high rate of seedling mortality. The common softwood trees are eastern white pine, red pine, red spruce, and hemlock; the common hardwoods are maple and beech.

Some areas of this soil are used for community development. The rapid permeability causes a hazard of pollution to shallow wells from sanitary landfills and sewage lagoons. Droughtiness makes it difficult to maintain a grass cover in heavily used areas.

The capability subclass is IIIs.

**AdC—Adams loamy fine sand, 8 to 15 percent slopes.** This soil is well drained to excessively drained and is sloping. It is on terraces and deltas. The areas are long and narrow to irregular in shape and range from 20 to 150 acres.

Typically this soil has a surface layer of black loamy fine sand 1 inch thick. The subsurface layer is pinkish gray loamy fine sand 4 inches thick. The subsoil is dark reddish brown and light olive brown loamy fine sand 21 inches thick. The substratum is olive yellow sand that extends to a depth of 60 inches or more.

Included with this soil in mapping are small areas of the Colton, Duxbury, Allagash, Adams Variant, and Croghan soils. Some areas have silt loam within 40 inches of the surface, and some have a surface layer of



Figure 3.—An area of Adams loamy fine sand used for hay.

fine sandy loam. Also included are small areas with slopes of less than 8 percent or more than 15 percent. The Colton, Duxbury, Allagash, Adams Variant, and Croghan soils make up about 10 percent of the unit. Other included soils make up about 10 to 15 percent.

The permeability of this Adams soil is rapid in the subsoil and very rapid in the substratum. Available water capacity is very low. The root zone extends to a depth of 40 inches. This soil is very strongly acid to medium acid in unlimed areas. Runoff is medium.

This soil is suitable for farming, and some of the acreage is farmed. Droughtiness and slope are the main limitations. The soil can be worked from early in the spring to late in the fall. Stripcropping, using grasses and legumes in the crop rotation, and using cover crops help to control erosion and maintain tilth. Crops and pastures on this soil respond well to lime and fertilizer.

Establishing and maintaining a mixture of grasses and legumes and preventing overgrazing are major pasture management concerns. The use of proper stocking rates to maintain desirable grasses and legumes and the rotation of pastures are the main management practices. Redtop, fescue, smooth brome, and ladino clover are the suitable species to plant.

This soil is suitable for woodland, and most of the acreage is wooded. The droughtiness of the soil causes a high rate of seedling mortality. The common softwood trees are eastern white pine, red pine, red spruce, and hemlock; the common hardwoods are maple and beech.

Some areas of this soil are used for community development. Slope limits the soil for sanitary landfills and sewage lagoons, and the rapid permeability causes a hazard of pollution to shallow wells from effluent. The droughtiness makes it difficult to maintain grass cover in heavily used areas.

The capability subclass is IVs.

**Add—Adams loamy fine sand, 15 to 25 percent slopes.** This soil is well drained to excessively drained and is moderately steep. It is on the faces of terraces and deltas. The areas are long and narrow to irregular in shape and range from 10 to 60 acres.

Typically this soil has a surface layer of black loamy fine sand 1 inch thick. The subsurface layer is pinkish gray loamy fine sand 3 inches thick. The subsoil is dark reddish brown and light olive brown loamy fine sand 19 inches thick. The substratum is olive yellow sand that extends to a depth of 60 inches or more.

Included with this soil in mapping are small areas of the Colton, Duxbury, Allagash, and Adams Variant soils. Some areas have silt loam within 40 inches of the surface, and some have a surface layer of fine sandy loam. Also included are areas with slopes of less than 15 percent or more than 25 percent. Included soils make up 15 percent of the unit.

The permeability of this Adams soil is rapid in the subsoil and very rapid in the substratum. Available water capacity is very low. The root zone extends to a depth of

40 inches. This soil is very strongly acid to medium acid in unlimed areas. Runoff is medium.

Droughtiness and slope make this soil unsuitable for cultivated crops. However, the soil is suitable for pasture. Establishing and maintaining a mixture of grasses and legumes and preventing overgrazing are the major pasture management concerns. The use of proper stocking rates to maintain desirable grasses and legumes, rotation of pastures, and the use of lime and fertilizer are the main management practices. Redtop, smooth brome, fescue, and ladino clover are the suitable species to plant.

The soil is suitable for woodland, and most of the acreage is wooded. The common softwood trees are eastern white pine, red pine, red spruce, and hemlock; the common hardwoods are maple and beech.

Some areas of this soil are used for community development. Slope limits the soil for sanitary landfills and onsite waste disposal, and the rapid permeability causes a hazard of pollution to shallow wells from effluent. Droughtiness makes it difficult to maintain grass cover in heavily used areas.

The capability subclass is VIs.

**AdE—Adams loamy fine sand, 25 to 50 percent slopes.** This soil is well drained to excessively drained and is steep. It is on the faces of terraces and deltas. The areas are long and narrow to irregular in shape and range from 10 to 100 acres.

Typically this soil has a surface layer of black loamy fine sand 1 inch thick. The subsurface layer is pinkish gray loamy fine sand 2 inches thick. The subsoil is dark reddish brown and light olive brown loamy fine sand 18 inches thick. The substratum is olive yellow sand that extends to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Colton, Duxbury, Allagash, and Adams Variant soils. Some areas have silt loam within 40 inches of the surface. Also included are areas with slopes of less than 25 percent or more than 50 percent. Included soils make up 15 percent of the unit.

The permeability of this Adams soil is rapid in the subsoil and very rapid in the substratum. Available water capacity is very low. The root zone extends to a depth of 40 inches. This soil is very strongly acid to medium acid in unlimed areas. Runoff is medium.

Slope and the droughty conditions make the soil generally unsuitable for farming. Although slope limits the use of equipment, the soil is suitable for woodland, and most areas are wooded. The common softwood trees are eastern white pine, red pine, red spruce, and hemlock; the common hardwoods are maple and beech.

Some of the acreage of this soil is used for community development, but the rapid permeability and slope are major limitations for this use. The rapid permeability causes a hazard of pollution to shallow wells from effluent. The droughtiness of the soil makes it difficult to maintain grass cover in heavily used areas.

The capability subclass is VII<sub>s</sub>.

**AeC—Adams-Adams Variant loamy fine sands, rocky, 8 to 15 percent slopes.** This complex consists of deep and moderately deep, sloping, well drained to excessively drained soils on terraces. The areas are irregular in shape and range from 10 to 50 acres. Areas of exposed bedrock cover less than 1 percent of the surface. The Adams and Adams Variant soils are so intermingled that it was not practical to map them separately. The complex is about 60 percent Adams soils, 25 percent Adams Variant soils, and 15 percent other soils.

Typically the Adams soil has a surface layer of black loamy fine sand 1 inch thick. The subsurface layer is pinkish gray loamy fine sand 4 inches thick. The subsoil is dark reddish brown loamy fine sand and light olive brown loamy sand 21 inches thick. The substratum is olive yellow sand that extends to a depth of more than 60 inches.

The Adams Variant soil has a surface layer of pinkish gray loamy fine sand 3 inches thick. The subsoil is dark reddish brown loamy fine sand and dark yellowish brown sand 29 inches thick. Bedrock is at a depth of 32 inches.

Included with these soils in mapping are areas near rock outcrops of soils that are less than 20 inches deep, areas in small depressions of soils with a seasonal high water table, and areas that have slopes of less than 8 percent or more than 15 percent. Also included are small areas of Allagash, Colton, and Salmon Variant soils.

The permeability of the Adams and Adams Variant soils is rapid to very rapid. Available water capacity is very low. The root zone extends to a depth of 40 inches in the Adams soils and is limited by the underlying bedrock in the Adams Variant soils. The soils are very strongly acid to medium acid in unlimed areas. Runoff is slow.

Droughtiness, slope, and the depth to rock limit this complex for cropland, and the areas of exposed rock impede the use of farm equipment. However, the complex is suited to unimproved pasture, and much of the acreage is pastured. Prevention of overgrazing is the main management concern. Redtop, fescue, smooth brome, and ladino clover are the suitable species to plant.

The complex is suitable for woodland, and many areas are wooded. If logging roads are used, building them on the less sloping areas helps to reduce erosion. The common trees are eastern white pine, red pine, red spruce, hemlock, maple, and beech.

The depth to rock, slope, and rapid permeability are the main limitations of this complex for community development. The rapid permeability causes a hazard of ground-water pollution from septic effluent. Lawns on these soils are difficult to maintain, especially in heavily used areas.

The capability subclass is IV<sub>s</sub> for the Adams part; VI<sub>s</sub> for the Adams Variant part.

**AeD—Adams-Adams Variant loamy fine sands, rocky, 15 to 25 percent slopes.** This complex consists of deep and moderately deep, moderately steep, well drained to excessively drained soils on plains. The areas are irregular in shape and range from 5 to 25 acres. Areas of exposed bedrock cover less than 1 percent of the surface. The Adams and Adams Variant soils are so intermingled that it was not practical to map them separately. The complex is about 55 percent Adams soils, 35 percent Adams Variant soils, and 10 percent other soils.

Typically the Adams soil has a surface layer of black loamy fine sand 1 inch thick. The subsurface layer is pinkish gray loamy fine sand 3 inches thick. The subsoil is dark reddish brown loamy fine sand and light olive brown loamy sand 19 inches thick. The substratum is olive yellow sand that extends to a depth of more than 40 inches.

The Adams Variant soil has a surface layer of pinkish gray loamy fine sand 3 inches thick. The subsoil is dark reddish brown loamy fine sand and dark yellowish brown sand 26 inches thick. Bedrock is at a depth of 29 inches.

Included with these soils in mapping are areas near rock outcrops of soils that are less than 20 inches deep and areas that have slopes of less than 15 percent or more than 25 percent. Also included are small areas of Allagash, Colton, and Salmon Variant soils.

The permeability of the Adams and Adams Variant soils is rapid to very rapid. Available water capacity is very low. The root zone extends to a depth of 40 inches in the Adams soils and is limited by the underlying bedrock in the Adams Variant soils. Both soils are very strongly acid to medium acid in unlimed areas. Runoff is rapid.

Slope, droughtiness, and the depth to rock make this complex unsuitable for cropland. The areas of exposed bedrock and the slope impede the use of farm equipment. However, the soils are suitable for unimproved pasture, and much of the acreage is pastured. The use of proper stocking rates and pasture rotation help to prevent erosion. Redtop, fescue, smooth brome, and ladino clover are the suitable species to plant.

The complex is suitable for woodland and many areas are wooded. If logging roads are used, building them on the less sloping areas and across the slope helps to reduce erosion. The common trees are eastern white pine, red spruce, hemlock, maple, and beech.

The depth to rock and the slope limit this complex for community development. The rapid permeability causes a hazard of ground-water pollution from septic effluent. Lawns on these soils are difficult to maintain.

The capability subclass is VI<sub>s</sub> for the Adams part; VII<sub>s</sub> for the Adams Variant part.

**AeE—Adams-Adams Variant loamy fine sands, rocky, 25 to 50 percent slopes.** This complex consists of deep and moderately deep, well drained to

excessively drained, steep soils on terraces. The areas are irregular in shape and range from 10 to 30 acres. Areas of exposed bedrock cover less than 1 percent of the surface. The Adams and Adams Variant soils are so intermingled that it was not practical to map them separately. The complex is about 45 percent Adams soils, 45 percent Adams Variant soils, and 10 percent other soils.

Typically the Adams soil has a surface layer of black loamy fine sand 1 inch thick. The subsurface layer is pinkish gray loamy fine sand 2 inches thick. The subsoil is dark reddish brown loamy fine sand and light olive brown loamy sand 16 inches thick. The substratum is olive yellow sand that extends to a depth of more than 40 inches.

The Adams Variant soil has a surface layer of pinkish gray loamy fine sand 3 inches thick. The subsoil is dark reddish brown loamy fine sand and dark yellowish brown sand 25 inches thick. Bedrock is at a depth of 28 inches.

Included with these soils in mapping are areas of soils that are less than 20 inches deep and soils that have slopes of less than 25 percent or more than 50 percent. Also included are small areas of Allagash, Colton, and Salmon Variant soils.

The permeability of the Adams and Adams Variant soils is rapid to very rapid. Available water capacity is very low. The root zone extends to a depth of 40 inches in the Adams soils and is limited by the underlying bedrock in the Adams Variant soils. Both soils are very strongly acid to medium acid in unlimed areas. Runoff is medium.

Slope, droughtiness, the depth to rock, and the areas of exposed bedrock limit these soils for most uses other than woodland. Most of the acreage is wooded, but slope limits the use of equipment. If logging roads are used, building them across the slope helps to control erosion. The common trees are white pine, red spruce, hemlock, maple, and beech.

The capability subclass is VIIc.

**AgB—Allagash very fine sandy loam, 2 to 8 percent slopes.** This soil is deep, well drained, and gently sloping. It is on terraces and deltas. The areas are long and narrow to irregular in shape and range from 10 to 50 acres.

Typically this soil has a surface layer of light gray fine sandy loam 7 inches thick. The subsoil is red and brown very fine sandy loam and fine sandy loam 25 inches thick. The substratum is light olive brown sand that extends to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Colton and Adams soils. Also included are areas that have a gravelly substratum and a thin layer of fine sandy loam, areas with slopes of less than 2 percent or more than 8 percent, and areas that have a few stones on the surface. The Colton and Adams soils make up about 10 percent of the unit. Other included soils make up about 15 percent.

The permeability of this Allagash soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. Available water capacity is high. Roots extend to a depth of 40 inches. The soil is very strongly acid to slightly acid in unlimed areas. Runoff is slow.

This soil is suitable for farming, and a few areas are farmed. The soil can be worked from early in the spring to late in the fall. Crops and pastures respond well to applications of lime and fertilizer. Using grasses and legumes in the crop rotation, stripcropping, and using diversions and cover crops help to control erosion and maintain tilth.

Establishing a mixture of grasses and legumes, preventing overgrazing, and using proper stocking rates are the major pasture management concerns. Redtop, smooth brome, fescue, and ladino clover are the suitable species for planting.

This soil is suited to woodland, and most of the acreage is wooded. The common trees are hemlock, balsam fir, red spruce, and northern hardwoods.

The moderately rapid permeability of this soil is the main limitation for community development. The permeability causes a hazard of ground-water pollution from onsite septic systems. The soil is a source of topsoil and roadfill but is unsuitable as a source of gravel.

The capability subclass is IIc.

**BeB—Berkshire fine sandy loam, 3 to 8 percent slopes.** This soil is deep, gently sloping, and well drained. It is on upland hills and ridges. The areas are oval to irregular in shape and range from 10 to 50 acres.

Typically this soil has a surface layer of dark brown fine sandy loam 8 inches thick. The subsoil is reddish brown and olive fine sandy loam 15 inches thick. The substratum is stratified olive gray gravelly fine sandy loam, loamy sand, and sand that extend to a depth of more than 60 inches.

Included with this soil in mapping are areas of Marlow, Tunbridge, Potsdam, and Lyman soils and areas of Peru soils and some poorly drained soils. Also included are small areas with slopes of more than 8 percent or less than 3 percent and small areas of deep, loose, moderately well drained soils in depressions. The Marlow, Tunbridge, Potsdam, Lyman, and Peru soils make up about 15 percent of the unit. Other included soils make up about 15 percent.

The permeability of this Berkshire soil is moderate to moderately rapid. Available water capacity is high. Roots extend to a depth of 40 inches. This soil is medium acid to extremely acid. Runoff is medium. The soil has a moderate frost action potential.

This soil is suitable for farming (fig. 4). Most of the acreage is used for farming, especially for hay. The main limitation for farming is the hazard of erosion. Using grasses and legumes in the crop rotation, stripcropping, and using diversions and cover crops help to control erosion and maintain tilth. Crops and pastures on this soil respond well to lime and fertilizer.





Figure 4.—An area of Berkshire fine sandy loam used for silage corn.

Establishing a mixture of grasses and legumes, preventing overgrazing, and using proper stocking rates are the major pasture management concerns. Redtop, smooth brome, fescue, and ladino clover are the suitable species for planting.

The soil is suitable for woodland, and a few areas are wooded. The common trees are sugar maple, birch, beech, white ash, red spruce, balsam fir, white pine, and hemlock.

Some areas of this soil are used for seasonal and permanent residential development. The frost action potential is a hazard for roads and foundations built on this soil.

The capability subclass is IIe.

**BeC—Berkshire fine sandy loam, 8 to 15 percent slopes.** This soil is deep, sloping, and well drained. It is on upland hills and ridges. These areas are irregular in shape and range from 20 to 100 acres.

Typically this soil has a surface layer of dark brown fine sandy loam 7 inches thick. The subsoil is reddish brown and olive fine sandy loam 15 inches thick. The substratum is stratified olive gray gravelly fine sandy loam, loamy sand, and sand that extend to a depth of more than 60 inches.

Included with this soil in mapping are areas of Marlow, Tunbridge, Potsdam, and Lyman soils and areas of Peru soils and some poorly drained soils. Also included are areas that have slopes of more than 15 percent or less than 8 percent and small areas of deep, loose, moderately well drained soils in depressions. The Marlow, Tunbridge, Potsdam, Lyman, and Peru soils make up about 15 percent of the unit. Other soils make up about 5 percent.

The permeability of this Berkshire soil is moderate to moderately rapid. Available water capacity is high. Roots extend to a depth of 40 inches. This soil is medium acid

to extremely acid. Runoff is medium. The soil has a moderate frost action potential.

This soil is suitable for farming. Most of the acreage is used for farming, especially for hay. The main limitations for farming are slope and the hazard of erosion. Using grasses and legumes in the crop rotation, stripcropping, and using diversions and cover crops help to control erosion and maintain tilth. Crops and pastures on this soil respond well to lime and fertilizer.

Establishing a mixture of grasses and legumes, preventing overgrazing, and using proper stocking rates are the major pasture management concerns. Redtop, smooth brome, fescue, and ladino clover are the suitable species for planting.

The soil is suitable for woodland, and a few areas are wooded. If logging roads are used, building them across the slope helps to reduce erosion. The common trees are sugar maple, birch, beech, white ash, red spruce, balsam fir, white pine, and hemlock.

Some areas of this soil are used for community development. The main limitations for this use are slope and the frost action potential, which is a hazard to roads and foundations built on this soil.

The capability subclass is IIle.

**BeD—Berkshire fine sandy loam, 15 to 25 percent slopes.** This soil is deep, moderately steep, and well drained. It is on upland hills and ridges. The areas are irregular in shape and range from 10 to 50 acres.

Typically this soil has a surface layer of dark brown fine sandy loam 5 inches thick. The subsoil is reddish brown and olive fine sandy loam 13 inches thick. The substratum is stratified olive gray gravelly fine sandy loam, loamy sand, and sand that extend to a depth of more than 60 inches.

Included with this soil in mapping are areas of Marlow, Tunbridge, Potsdam, and Lyman soils and areas of Peru soils and some poorly drained soils. Also included are areas that have slopes of more than 25 percent or less than 15 percent and small areas of deep, loose, moderately well drained soils in drainageways. The Marlow, Tunbridge, Potsdam, Lyman, and Peru soils make up about 10 percent of the unit. Other included soils make up about 15 percent.

The permeability of this Berkshire soil is moderate to moderately rapid. Available water capacity is high. Roots extend to a depth of 40 inches. This soil is medium acid to extremely acid. Runoff is medium. The soil has moderate frost action potential.

Slope and a hazard of erosion make this soil generally unsuitable for crops and limit use of the soil for hay and pasture. Much of the acreage is used for pasture. Establishing a mixture of grasses and legumes, preventing overgrazing, and using proper stocking rates are the major pasture management concerns. Pastures on this soil respond to lime and fertilizer. Redtop, smooth brome, fescue, and ladino clover are the suitable species for planting.

This soil is suitable for woodland, and many areas are wooded. Slope limits the use of equipment. If logging roads are used, building them across the slope helps to reduce erosion. The common trees are sugar maple, birch, beech, white ash, red spruce, hemlock, white pine, and balsam fir.

Some areas of this soil are used for permanent or seasonal residential development. The main limitations for most types of community development are slope and the frost action potential, which is a hazard to roads and foundations built on this soil.

The capability subclass is IVe.

**BkB—Berkshire very stony fine sandy loam, 3 to 8 percent slopes.** This soil is deep, gently sloping, and well drained. It is on upland hills and ridges. The areas are oval to irregular in shape and range from 5 to 25 acres. Stones cover as much as 3 percent of the surface.

Typically, this soil has a surface layer of pinkish gray fine sandy loam 3 inches thick. The subsoil is very dusky red loam and olive fine sandy loam 20 inches thick. The substratum is stratified olive gray gravelly fine sandy loam, loamy sand, and sand that extend to a depth of more than 60 inches.

Included with this soil in mapping are areas of Marlow, Tunbridge, Potsdam, and Lyman soils and Peru soils and some poorly drained soils. Also included are areas that have slopes of more than 8 percent or less than 3 percent; areas where stones cover more than 3 percent of the surface; and areas of deep, loose, moderately well drained soils in small depressions. The Marlow, Tunbridge, Potsdam, Lyman, and Peru soils make up about 15 percent of the unit. Other included soils make up about 10 percent.

The permeability of this Berkshire soil is moderate to moderately rapid. Available water capacity is high. Roots extend to a depth of 40 inches. This soil is medium acid to extremely acid. Runoff is medium. The soil has a moderate frost action potential.

Use of this soil for crops requires removal of stones from the surface. The stones preclude the use of tillage equipment, and the slope causes a hazard of erosion.

The soil is suitable for unimproved pasture, and some areas are pastured, but it is poorly suited to improved pastures. Lime and fertilizer are needed to maintain fertility, but the stone cover limits the use of equipment. Rotation grazing is needed, especially during dry periods, to maintain the growth of pasture.

This soil is suitable for woodland. Most of the acreage is wooded. The common trees are sugar maple, birch, beech, white ash, red spruce, hemlock, white pine, and balsam fir.

Some areas of this soil are used for seasonal or permanent residential development. The main limitation for community development are the stones on the surface and a frost action potential, which is a hazard to roads and foundations built on this soil.



The capability subclass is VIs.

**BkC—Berkshire very stony fine sandy loam, 8 to 15 percent slopes.** This soil is deep, sloping, and well drained. It is on upland hills and ridges. The areas are oval to irregular in shape and range from 10 to 150 acres. Stones cover as much as 3 percent of the surface.

Typically this soil has a surface layer of pinkish gray fine sandy loam 3 inches thick. The subsoil is very dusky red loam and olive fine sandy loam 20 inches thick. The substratum is stratified olive gray gravelly fine sandy loam, loamy sand, and sand that extend to a depth of more than 60 inches.

Included with this soil in mapping are areas of Marlow, Tunbridge, Potsdam, Lyman, and Peru soils and some poorly drained soils. Also included are areas that have slopes of more than 15 percent or less than 8 percent and areas of deep, loose, moderately well drained soils. The Marlow, Tunbridge, Potsdam, Lyman, and Peru soils make up about 15 percent of the unit. Other included soils make up about 15 percent.

The permeability of this Berkshire soil is moderate to moderately rapid. Available water capacity is high. Roots extend to a depth of 40 inches. This soil is medium acid to extremely acid. Runoff is medium. The soil has a moderate frost action potential.

Use of this soil for crops requires removal of the stones from the surface. The stones preclude the use of tillage equipment, and the slope causes a hazard of erosion.

The soil is suitable for unimproved pasture, and some areas are pastured, but it is unsuited to improved pasture. Lime and fertilizer are needed to maintain fertility, but the stone cover limits equipment use.

This soil is suitable for woodland, and most areas are wooded. If logging roads are used, building them across the slope helps to reduce erosion. The common trees are sugar maple, birch, beech, white ash, red spruce, hemlock, white pine, and balsam fir.

Some areas of this soil are used for permanent or seasonal residential development. The main limitations for urban development are slope, the stones on the surface, and the frost action potential, which is a hazard to roads and foundations built on the soil.

The capability subclass is VIs.

**BkD—Berkshire very stony fine sandy loam, 15 to 25 percent slopes.** This soil is deep, moderately steep, and well drained. It is on upland hills and ridges. The areas are irregular in shape and range from 10 to 100 acres. Stones cover as much as 3 percent of the surface.

Typically this soil has a surface layer of pinkish gray fine sandy loam 1 inch thick. The subsoil is very dusky red loam and olive fine sandy loam 20 inches thick. The substratum is stratified olive gray gravelly fine sandy loam, loamy sand, and sand that extend to a depth of more than 60 inches.

Included with this soil in mapping are areas of Marlow, Tunbridge, Potsdam, Lyman, and Peru soils and some poorly drained soils. Also included are areas that have slopes of more than 25 percent or less than 15 percent and areas of deep, loose, moderately well drained soils in small drainageways. The Marlow, Tunbridge, Potsdam, Lyman, and Peru soils make up about 15 percent of the unit. Other included soils make up about 15 percent.

The permeability of this Berkshire soil is moderate to moderately rapid. Available water capacity is high. Roots extend to a depth of 40 inches. This soil is medium acid to extremely acid. Runoff is medium. The soil has a moderate frost action potential.

The slope, the stones on the surface, and the hazard of erosion make this soil generally unsuitable for crops and poorly suited to pasture. Some areas are used for unimproved pasture, but the stones and slope limit the use of equipment.

The soil is suitable for woodland, and most areas are wooded, but slope limits the use of equipment. If logging roads are used, building them across the slope and using waterbars help to reduce erosion. The common trees are sugar maple, birch, beech, white ash, red spruce, hemlock, white pine, and balsam fir.

Some areas of this soil are used for permanent or seasonal residential development. The main limitations for urban development are slope, the stones on the surface, and the frost action potential, which is a hazard to roads and foundations built on this soil. The slope especially limits the soil as a site for septic systems.

The capability subclass is VIs.

**BrB—Berkshire-Tunbridge fine sandy loams, rocky, 3 to 8 percent slopes.** This complex consists of deep and moderately deep, well drained, gently sloping soils on upland ridges and hills. The areas are irregular in shape and range from 10 to 40 acres in size. Areas of exposed bedrock cover less than 1 percent of the surface. The Berkshire and Tunbridge soils are so intermingled that it was not practical to map them separately. The complex is about 60 percent Berkshire soil, 25 percent Tunbridge soils, and 15 percent other soils.

Typically the Berkshire soil has a surface layer of pinkish gray fine sandy loam 3 inches thick. The subsoil is very dusky red loam and olive fine sandy loam 20 inches thick. The substratum is olive gray gravelly fine sandy loam that extends to a depth of 60 inches or more.

Typically the Tunbridge soil has a surface layer of dark brown fine sandy loam 2 inches thick. The subsurface layer is grayish brown fine sandy loam 2 inches thick. The subsoil is dark reddish brown loam and yellowish brown silt loam 11 inches thick. The substratum is brown gravelly fine sandy loam 13 inches thick. Bedrock is at a depth of 28 inches.

Included in this complex in mapping are areas of Lyman and Marlow soils and areas of Peru soils and

some poorly drained soils. Also included are areas of soils that have bedrock between depths of 40 and 60 inches, soils that have bedrock at a depth of less than 8 inches, and soils with slopes of more than 8 percent or less than 3 percent.

The permeability of the Berkshire and Tunbridge soils is moderate to moderately rapid. Available water capacity is high. Rooting depth is limited by the bedrock in the Tunbridge soils. This complex is extremely acid to slightly acid in unlimed areas.

This complex is suitable for cultivated crops, but little of the acreage is tilled. The areas of exposed bedrock restrict the use of tillage equipment. If the soils are tilled, using a crop rotation with grasses and legumes and an occasional row crop helps to control erosion and maintain tilth. Crops and pastures respond to applications of lime and fertilizer.

Many areas of this soil are used for and suited to hay and pasture. The main pasture management practices include using proper stocking rates and rotating pastures. Smooth brome, fescue, redtop, and ladino clover are the suitable pasture species.

This complex is suited to woodland, and most of the acreage is wooded. Hemlock, sugar maple, birch, red spruce, and beech are the common trees.

The main limitations of this complex for community development are the depth to rock and the areas of exposed bedrock.

The capability subclass is IIe.

**BrC—Berkshire-Tunbridge fine sandy loams, rocky, 8 to 15 percent slopes.** This complex consists of deep and moderately deep, well drained, sloping soils on upland ridges and hills. The areas are irregular in shape and range from 30 to 150 acres. Areas of exposed bedrock cover less than 1 percent of the surface. The Berkshire and Tunbridge soils are so intermingled that it was not practical to map them separately. The complex is about 55 percent Berkshire soils, 30 percent Tunbridge soils, and 15 percent other soils.

Typically the Berkshire soil has a surface layer of pinkish gray fine sandy loam 3 inches thick. The subsoil is very dusky red loam and olive fine sandy loam 20 inches thick. The substratum is olive gray gravelly fine sandy loam that extends to a depth of 60 inches or more.

Typically the Tunbridge soil has a surface layer of dark brown fine sandy loam 2 inches thick. The subsurface layer is grayish brown fine sandy loam 1 inch thick. The subsoil is dark reddish brown loam and yellowish brown silt loam 11 inches thick. The substratum is dark grayish brown gravelly fine sandy loam 14 inches thick. Bedrock is at a depth of 28 inches.

Included with these soils in mapping are areas of Lyman and Marlow soils and Peru soils and some poorly drained soils. Also included are soils that have bedrock between depths of 40 and 60 inches, soils that have bedrock at a depth of less than 8 inches, and areas that

have slopes of more than 15 percent or less than 8 percent.

The permeability of these Berkshire and Tunbridge soils is moderate to moderately rapid. Available water capacity is high. The rooting depth is limited by bedrock in the Tunbridge soil. The soils are extremely strongly acid to slightly acid in unlimed areas.

These soils are suitable for crops, but the slope, the depth to bedrock, and the areas of exposed bedrock limit cultivation. Generally, the surface of the soils is too uneven and rocky for tillage equipment.

Much of this complex is suited to and used for hay and pasture. Establishing a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, using lime and fertilizer, and preventing overgrazing are the major concerns of pasture management. Redtop, smooth brome, fescue, and ladino clover are the suitable species for planting.

This complex is suited to woodland, and much of the acreage is wooded. If logging skid trails and roads are used, building them across the slope helps to reduce erosion. Hemlock, sugar maple, birch, beech, and red spruce are the common trees.

Slope, the depth to bedrock, and the areas of exposed bedrock limit these soils for community development.

The capability subclass is IIIe.

**BrD—Berkshire-Tunbridge fine sandy loams, rocky, 15 to 25 percent slopes.** This complex consists of deep and moderately deep, well drained, moderately steep soils on upland ridges and hills. The areas are irregular in shape and range from 20 to 70 acres. Areas of exposed bedrock cover less than 1 percent of the surface. The Berkshire and Tunbridge soils are so intermingled that it was not practical to map them separately. The complex is about 50 percent Berkshire soils, 30 percent Tunbridge soils, and 20 percent other soils.

Typically the Berkshire soil has a surface layer of gray fine sandy loam 2 inches thick. The subsoil is very dusky red loam and olive fine sandy loam 24 inches thick. The substratum is olive gray gravelly fine sandy loam that extends to a depth of 60 inches or more.

Typically the Tunbridge soil has a surface layer of dark brown fine sandy loam 2 inches thick. The subsurface layer is grayish brown fine sandy loam 1 inch thick. The subsoil is dark reddish brown loam and yellowish brown silt loam 11 inches thick. The substratum is light olive brown gravelly fine sandy loam 14 inches thick. Bedrock is at a depth of 28 inches.

Included with these soils in mapping are areas of Lyman and Marlow soils and Peru soils and some poorly drained soils. Also included are areas of soils that have bedrock between depths of 40 and 60 inches, soils with bedrock at a depth of less than 8 inches, and soils that have slopes of more than 25 percent or less than 15 percent.

The permeability of these Berkshire and Tunbridge soils is moderate to moderately rapid. Available water

capacity is high. The rooting depth is limited by bedrock in the Tunbridge soil. The soils are extremely acid to slightly acid in unlimed areas.

Slope and the areas of exposed bedrock make these soils poorly suited to crops. However, the soils are suitable for pasture, and some of the complex is used for pasture. Establishing a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, using lime and fertilizer, and preventing overgrazing are the major concerns of pasture management. Redtop, smooth brome, fescue, and ladino clover are the suitable species for planting.

This complex is suitable for woodland, and much of the acreage is wooded. Slope limits the use of harvesting equipment. If roads and skid trails are used, building them across the slope and using waterbars help to reduce erosion. Hemlock, birch, beech, sugar maple, and red spruce are the common trees.

Slope, the depth to bedrock, and the areas of exposed bedrock limit these soils for community development.

The capability subclass is IVe.

**BtE—Berkshire and Marlow soils, 25 to 50 percent slopes.** This unit consists of deep, well drained to moderately well drained, steep soils on uplands. Some areas of this unit consist of Berkshire soils, some of Marlow soils, and some of both. The soils were mapped together because they have no major differences in use and management. The total acreage of the unit is about 40 percent Berkshire soils, 20 percent Marlow soils, and 40 percent other soils. The areas are irregularly shaped and range from 20 to 150 acres. Stones cover as much as 15 percent of the surface of some areas.

Typically the Berkshire soil has a surface layer of pinkish gray fine sandy loam 1 inch thick. The subsoil is very dusky red loam and olive fine sandy loam 18 inches thick. The substratum is stratified fine sandy loam, gravelly loamy sand, and cobbly sand that extend to a depth of more than 60 inches.

The Marlow soil typically has a surface layer of black organic material about 2 inches thick. The upper part of the subsoil is dark reddish brown and olive fine sandy loam 24 inches thick. The lower part of the subsoil is a very firm layer of dark gray gravelly fine sandy loam 39 inches thick. The substratum is olive gray gravelly sandy loam that extends to a depth of more than 60 inches.

Included with these soils in mapping are areas of Peru soils in drainageways and concave areas, areas of Tunbridge and Lyman soils on ridgetops or in areas underlain by bedrock at a depth of less than 40 inches, and soils that have slopes of less than 25 percent or more than 50 percent. The Peru, Lyman, and Tunbridge soils make up about 20 percent of the unit, and other soils make up about 20 percent.

The permeability of the Berkshire soils is moderate to moderately rapid throughout. The permeability of the Marlow soils is moderate to moderately rapid in the surface layer and upper part of the subsoil, and it is

moderately slow to slow in the lower part of the subsoil and in the substratum. The available water capacity of both soils is high. Both soils range from medium acid to extremely acid. Runoff is rapid. The soils have a moderate frost action potential.

Slope and the stones on the surface make these soils generally unsuitable for farming. The soils are suitable for woodland, and most areas are wooded, but the slope also limits the safe use of logging equipment. If skid trails are used, building them across the slope helps to reduce erosion. The soil is more suitable for logging when it is frozen or during dry periods. The common hardwood trees on these soils are sugar maple, red maple, birch, and beech; the common softwoods are red spruce, balsam fir, and hemlock.

Some areas of this unit are used for seasonal residential development. The main limitations for community development are the slope, the frost action potential, and the stones on the surface. Seasonal wetness is also a limitation in some areas.

The capability subclass is VIIs.

**BuB—Boothbay silt loam, 3 to 8 percent slopes.** This soil is deep, moderately well drained, and gently sloping. It is on plains in valleys generally at an elevation of less than 800 feet above sea level. The areas are oval to irregular in shape and range from 10 to 60 acres.

Typically, this soil has a surface layer of dark grayish brown silt loam 10 inches thick. The subsoil is olive silt loam 20 inches thick. The substratum is olive, mottled silt loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are areas of Swanville soils and very poorly drained soils. Also included are areas of soils that have a few stones or boulders on the surface and soils in gullies that have slopes of more than 8 percent. Also included are small areas of soils with less than 18 percent clay. The Swanville soils make up about 20 percent of this unit. Other soils make up 15 percent.

The permeability of this Boothbay soil is moderately slow in the subsoil and slow in the substratum. Available water capacity is high. The root zone extends to a depth of about 2 feet. The soil is slightly acid to neutral. Runoff is medium. The soil has a high frost action potential. A seasonal high water table is at a depth of 12 to 24 inches in the spring and fall.

This soil is suitable for farming, and much of the acreage is farmed. Slope, the hazard of erosion, and a seasonal high water table are the main limitations. Using a crop rotation of grasses and legumes and an occasional row crop and using strip cropping, diversions, and cover crops help to control erosion and maintain tilth. Tile drainage helps to reduce seasonal wetness. Crops and pastures on this soil respond well to lime and fertilizer.

Establishing a mixture of grasses and legumes; using proper stocking rates to maintain desirable grasses and legumes; and preventing overgrazing, especially during

wet periods in spring and fall, are the major concerns of pasture management. Redtop, smooth brome, fescue, and ladino clover are the suitable species for planting.

This soil is suitable for woodland, and a few areas are wooded. The soil is more suitable for logging when it is frozen or during dry periods. If roads and skid trails are used, building them across the slope helps to control erosion. The common trees are eastern white pine, sugar maple, yellow birch, and red spruce.

A few areas of this soil are used for community development. Seasonal wetness, slow permeability, and the frost action potential are the main limitations for this use. Wetness and slow permeability cause wet basements and restrict the use of septic sewage systems. The frost action potential causes heaving and cracking and is a hazard to foundations and roads.

The capability subclass is IIw.

#### **BuC—Boothbay silt loam, 8 to 15 percent slopes.**

This soil is deep, moderately well drained, and sloping. It is on plains in valleys generally at an elevation of less than 800 feet above the sea level. The areas are oval to irregular in shape and range from 10 to 50 acres.

Typically this soil has a surface layer of dark grayish brown silt loam 10 inches thick. The subsoil is olive, mottled silt loam 20 inches thick. The substratum is olive, mottled silt loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are areas of Swanville soils in drainageways. Also included are areas of soils that have a few stones or boulders on the surface and soils in gullies that have slopes of more than 15 percent. Also included are small areas of soils with less than 18 percent clay. The Swanville soils make up about 5 percent of this unit. Other soils make up about 15 percent.

The permeability of this Boothbay soil is moderately slow in the subsoil and slow in the substratum. Available water capacity is high. The root zone extends to a depth of about 2 feet. The soil is slightly acid to neutral. Runoff is rapid. The soil has a high frost action potential. A seasonal high water table is at a depth of 12 to 24 inches during the spring and fall.

This soil is suitable for farming, and much of the acreage is farmed. Slope and a seasonal high water table are the main limitations. Using a crop rotation of grasses and legumes with an occasional row crop and using stripcropping, diversions, and cover crops help to control erosion and maintain tilth. Tile drainage helps to reduce seasonal wetness. Crops and pastures respond well to lime and fertilizer.

Establishing a mixture of grasses and legumes; using proper stocking rates to maintain desirable grasses and legumes; and preventing overgrazing, especially during wet periods in spring and fall, are the major concerns of pasture management. Redtop, smooth brome, fescue, and ladino clover are the suitable species for planting.

This soil is suitable for woodland, and a few areas are wooded. If logging roads are used, building them across

the slope helps to reduce erosion. The soil is more suitable for logging when it is frozen or during dry periods. The common trees are eastern white pine, sugar maple, yellow birch, and red spruce.

Some areas of this soil are used for community development. Slope, seasonal wetness, slow permeability, and the frost action potential are the main limitations for this use. Wetness and slow permeability cause wet basements and restrict the use of septic sewage systems. The frost action potential causes heaving and is a hazard to foundations and roads.

The capability subclass is IIIe.

#### **BuD—Boothbay silt loam, 15 to 25 percent slopes.**

This soil is deep, moderately well drained, and moderately steep. It is on plains in valleys generally at an elevation of less than 800 feet above sea level. The areas are oval to irregular in shape and range from 10 to 40 acres.

Typically this soil has a surface layer of dark grayish brown silt loam 8 inches thick. The subsoil is olive, mottled silt loam 18 inches thick. The substratum is olive, mottled silt loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are areas of Salmon and Swanville soils. Also included are areas of soils that have a few stones or boulders on the surface and soils in gullies that have slopes of more than 25 percent. The Salmon and Swanville soils make up about 20 percent of this unit. Other included soils make up about 15 percent.

The permeability of this Boothbay soil is moderately slow in the subsoil and slow in the substratum. Available water capacity is high. The root zone extends to a depth of about 2 feet. The soil is slightly acid to neutral. Runoff is rapid. The soil has a high frost action potential. A seasonal high water table is at a depth of 12 to 24 inches in the spring and fall.

Slope, erosion, and a seasonal high water table limit the soil for farming, but the soil is suited to and used for hay and pasture. Establishing a mixture of grasses and legumes; using proper stocking rates to maintain desirable grasses and legumes; and preventing overgrazing, especially during wet periods in spring and fall, are the major pasture management concerns. The soil responds to lime and fertilizer. Redtop, smooth brome, fescue, and ladino clover are the suitable species for planting.

This soil is suitable for woodland, and most of the acreage is wooded. Constructing roads and trails across the slope, using waterbars, logging when the soil is frozen or dry, and seeding log landings and skid roads help to control erosion. The common trees are eastern white pine, red pine, red spruce, sugar maple, and yellow birch.

Some areas of this soil are used for community development. Slope, seasonal wetness, slow permeability, and the frost action potential are the main limitations for this use. Wetness and slow permeability

cause wet basements and restrict septic sewage systems. The frost action potential causes heaving and is a hazard to foundations and roads.

The capability subclass is IVe.

**Bx—Borochemists, deep.** This unit consists of very poorly drained, nearly level, deep organic soils in bogs throughout the county. The areas are irregular in shape and range from 5 to 50 acres.

The surface layer of these soils generally is very dark brown and very dark gray muck 15 inches thick. The subsurface layer is very dark grayish brown and dark brown muck to a depth of 51 inches or more and is underlain by a substratum of dark gray fine sandy loam.

Included with these soils in mapping are small areas of Walpole, Scarboro, and Peacham soils and Histic Fluvaquents. Also included are areas of soils that have a mineral substratum at a depth of less than 51 inches. Included soils make up 5 to 10 percent of this unit.

The permeability of Borochemists is moderate throughout. Available water capacity and organic matter content are high. The root zone is limited by a seasonal high water table that is at or near the surface of the soil from late summer to late spring. Water is ponded on the surface frequently from fall to spring. Reaction ranges from extremely acid to medium acid throughout the soil. Runoff is very slow. The frost action potential of these soils is high.

The high water table and organic matter content make these soils unsuitable for most uses. Some areas are covered with stands of alder, eastern white pine, balsam fir, or white spruce, but the soils are poorly suited to tree production.

This unit is not assigned to a capability subclass.

**By—Borochemists, moderately deep over loamy substratum.** This unit consists of very poorly drained, nearly level organic soils in bogs throughout the county. The areas are irregular in shape and range from 5 to 30 acres in size.

These soils generally have a surface layer of black mucky peat 22 inches thick. Below this is a layer of very dark gray silt loam.

Included with these soils in mapping are small areas of Searsport, Walpole, and Peacham soils; Histic Fluvaquents; and deep, organic soils. Also included are small areas of soils that have a sandy underlying layer. Included soils make up 15 to 20 percent of this unit.

The permeability of Borochemists is moderate in the surface layer and very slow below the surface layer. Available water capacity and organic matter content are high. The root zone extends to a depth of about 22 inches. Reaction ranges from extremely acid to medium acid throughout the soils. The water table is at or near the surface from late summer to late spring, and water is ponded on the surface of the soil frequently from fall to spring. Runoff is very slow. The frost action potential of these soils is high.

The high water table and organic matter content of these soils make them generally unsuitable for most uses. Many of the areas are covered with stands of alder, eastern white pine, or white spruce, but the soils are poorly suited to tree production.

This unit is not assigned to a capability subclass.

**CoB—Colton-Duxbury complex, 2 to 8 percent slopes.** This complex consists of deep, well drained to excessively drained, gently sloping soils in valleys. The areas are long and narrow to irregular in shape and range from 10 to 100 acres. The Colton and Duxbury soils are so intermingled that it was not practical to map them separately. The complex is about 40 percent Colton soils, 30 percent Duxbury soils, and 30 percent other soils.

Typically the Colton soil has a surface layer of dark brown loamy sand 10 inches thick. The subsoil is mainly dark red loamy sand and light olive brown gravelly loamy sand 17 inches thick. The substratum is light yellowish brown very gravelly sand that extends to a depth of 60 inches or more.

The Duxbury soil typically has a surface layer of dark brown fine sandy loam 10 inches thick. The subsoil is dark reddish brown fine sandy loam and dark yellowish brown gravelly fine sandy loam 15 inches thick. The substratum is pale brown very gravelly sand that extends to a depth of 60 inches or more.

Included with these soils in mapping are areas of Allagash, Adams Variant, and Adams soils and areas of Croghan, Walpole, and Searsport soils in depressions. Also included are areas of soils with thin silty layers between depths of 40 and 60 inches and areas with slopes of more than 8 percent or less than 2 percent.

Permeability is rapid to very rapid in the Colton soils. In the Duxbury soils it is moderately rapid in the subsoil and rapid in the substratum. Available water capacity is moderate in the Duxbury soils and very low in the Colton soils. Both soils are extremely acid to slightly acid in unlimed areas.

These soils are suitable for farming, and much of the acreage is used for hay or cultivated crops. Droughtiness is a major limitation. Using grasses and legumes in the crop rotation, stripcropping, and using cover crops help to control erosion and maintain tilth, especially if continuous corn is grown.

Establishing a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, and preventing overgrazing are the major pasture management concerns. Pastures respond well to lime and fertilizer. Redtop, smooth brome, fescue, and ladino clover are the suitable species for planting.

This complex is suitable for woodland, and a large acreage is used for tree production. Droughtiness is the main limitation. Eastern white pine, hemlock, balsam fir, and red spruce are the common softwood species on this soil; the common hardwoods are red maple, aspen, and sugar maple.

Some of this complex is used for community development. The rapid permeability causes hazard of ground-water pollution from septic systems.

The capability subclass is IIIs for the Colton part; IIs for the Duxbury part.

**CoC—Colton-Duxbury complex, 8 to 15 percent slopes.** This complex consists of deep, well drained to excessively drained, sloping soils on terraces or eskers in valleys. These areas are long and narrow to irregular in shape and range from 10 to 100 acres. The Colton and Duxbury soils are so intermingled that it was not practical to map them separately. The complex is about 40 percent Colton soils, 30 percent Duxbury soils, and 30 percent other soils.

Typically the Colton soil has a surface layer of dark brown loamy sand 9 inches thick. The subsoil is mainly dark red loamy sand and light olive brown gravelly loamy sand 17 inches thick. the substratum is light yellowish brown very gravelly sand that extends to a depth of 60 inches or more.

The Duxbury soil typically has a surface layer of dark brown fine sandy loam 9 inches thick. The subsoil is dark reddish brown fine sandy loam and dark yellowish brown gravelly fine sandy loam 15 inches thick. The substratum is pale brown very gravelly sand that extends to a depth of 60 inches or more.

Included with these soils in mapping are areas of Allagash, Adams Variant, and Adams soils and areas of Croghan soils in depressions. Also included are areas of soils with thin silty layers between depths of 40 and 60 inches and areas with slopes of more than 15 percent or less than 8 percent.

Permeability is rapid to very rapid in the Colton soils. In the Duxbury soils it is moderately rapid in the subsoil and rapid in the substratum. Available water capacity is moderate in the Duxbury soils and very low in the Colton soils. Both soils are extremely acid to slightly acid in unlimed areas.

These soils are suitable for farming, and most of the acreage is farmed. Slope and erosion are the main limitations; droughtiness is a concern during dry summers. Using a crop rotation of grasses and legumes and an occasional row crop, strip cropping, and using cover crops help to control erosion and maintain tilth.

Establishing and maintaining a mixture of grasses and legumes, using proper stocking rates, and preventing overgrazing are the major pasture management concerns. Pastures on these soils respond to lime and fertilizer. Redtop, smooth brome, fescue, and ladino clover are the suitable pasture species on these soils.

These soils are suitable for woodland. A large acreage is used for tree production. Droughtiness is the main limitation for trees. Eastern white pine, hemlock, balsam fir, and red spruce are the common softwood species on this soil; the common hardwoods are red maple, sugar maple, and aspen.

Some areas of this complex are used for community development. The rapid permeability causes a hazard of ground-water pollution from septic systems.

The capability subclass is IVs for the Colton part; IIIe for the Duxbury part.

**CoD—Colton-Duxbury complex, 15 to 25 percent slopes.** This complex consists of deep, well drained to excessively drained, moderately steep soils in valleys. The areas are long and narrow to irregular in shape and range from 10 to 40 acres. The Colton and Duxbury soils are so intermingled that it was not practical to map them separately. The complex is about 40 percent Colton soils, 30 percent Duxbury soils, and 30 percent other soils.

Typically the Colton soil has a surface layer of gray loamy sand 3 inches thick. The subsoil is mainly dark red loamy sand and light olive brown gravelly loamy sand 24 inches thick. The substratum is light yellowish brown very gravelly sand that extends to a depth of 60 inches or more.

The Duxbury soil typically has a surface layer of pinkish gray fine sandy loam 5 inches thick. The subsoil is dark reddish brown fine sandy loam and dark yellowish brown gravelly fine sandy loam 20 inches thick. The substratum is pale brown very gravelly sand that extends to a depth of 60 inches or more.

Included with these soils in mapping are areas of Allagash, Adams Variant, and Adams soils. Also included are areas of soils with thin silt layers between depths of 40 and 60 inches and areas with slopes of more than 25 percent or less than 15 percent.

Permeability is rapid to very rapid in the Colton soils. In the Duxbury soils it is moderately rapid in the subsoil and rapid in the substratum. Available water capacity is moderate in the Duxbury soil and very low in the Colton soil. Both soils are extremely acid to slightly acid in unlimed areas.

Slope, erosion, and droughtiness make these soils generally unsuitable for crops and are major limitations for pasture. A few areas are pastured. Establishing a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, and preventing overgrazing are the major pasture management concerns. Pastures on this soil respond well to lime and fertilizer. Redtop, smooth brome, fescue, and ladino clover are the suitable species for planting.

This complex is suitable for woodland, and most of the acreage is wooded. Droughtiness is the main limitation. Eastern white pine, hemlock, balsam fir, and red spruce are the dominant softwood species on these soils; the common hardwoods are red maple, sugar maple, and aspen.

A few areas of this complex are used for community development. Slope is a major limitation. The rapid permeability causes a hazard of ground-water pollution from septic systems.

The capability subclass is IVs for the Colton part; IVe for the Duxbury part.

**CoE—Colton-Duxbury complex, 25 to 50 percent slopes.** This complex consists of deep, well drained to excessively drained, steep soils in valleys. The areas are long and narrow to irregular in shape and range from 10 to 50 acres. The Colton and Duxbury soils are so intermingled that it was not practical to map them separately. The complex is about 50 percent Colton soils, 20 percent Duxbury soils, and 30 percent other soils.

Typically the Colton soil has a surface layer of gray loamy sand 2 inches thick. The subsoil is mainly dark red loamy sand and light olive brown gravelly loamy sand 22 inches thick. The substratum is light yellowish brown very gravelly sand that extends to a depth of 60 inches or more.

The Duxbury soil typically has a surface layer of pinkish gray fine sandy loam 2 inches thick. The subsoil is dark reddish brown and dark yellowish brown fine sandy loam 19 inches thick. The substratum is pale brown very gravelly sand that extends to a depth of 60 inches or more.

Included with these soils in mapping are areas of Allagash, Adams Variant, and Adams soils. Also included are areas of soils with silty layers between depths of 40 and 60 inches and areas with slopes of more than 50 percent or less than 25 percent.

Permeability is rapid to very rapid in the Colton soils. In the Duxbury soils it is moderately rapid in the subsoil and rapid in the substratum. Available water capacity is moderate in the Duxbury soils and very low in the Colton soils. Both soils are extremely acid to slightly acid.

Slope and droughtiness make this complex generally unsuitable for farming.

The complex is suitable for trees, and most of the acreage is wooded, but droughtiness is a limitation for many tree species. Slope limits the use of equipment. Eastern white pine, hemlock, balsam fir, and red spruce are the dominant softwood species on this soil; the common hardwoods are red maple, sugar maple, and aspen.

Slope is a major limitation of the soils for urban development. The rapid permeability causes a hazard of ground-water pollution from septic systems.

The capability subclass is VII<sub>s</sub> for the Colton part; VI<sub>e</sub> for the Duxbury part.

**CrB—Croghan loamy fine sand, 2 to 8 percent slopes.** This soil is deep, moderately well drained, and gently sloping. It is on terraces and deltas along river valleys. The areas are long and narrow to irregular in shape and range from 5 to 25 acres.

Typically this soil has a surface layer of dark brown loamy fine sand 8 inches thick. The upper part of the subsoil is dark yellowish brown loamy sand 5 inches thick. The lower part of the subsoil is mottled, light olive brown sand and mottled, olive loamy fine sand 11 inches

thick. The substratum is olive sand that extends to a depth of 60 inches or more.

Included with this soil in mapping are areas of Colton and Adams soils on knolls and areas of Walpole and Searsport soils in depressions. Also included are soils that have a gravelly or silty substratum. The Colton, Adams, Walpole, and Searsport soils make up about 10 percent of the unit. Other soils make up about 10 percent.

The permeability of this Croghan soil is very rapid. Available water capacity is very low. The rooting depth is limited by a seasonal high water table at a depth of 18 to 24 inches during spring and fall. The soil is very strongly acid to medium acid in unlimed areas. Runoff is slow, and the frost action potential is moderate.

This soil is suitable for farming. Most of the acreage is farmed. The soil is easily worked, but the seasonal high water table restricts tillage in early spring and late fall. If suitable outlets are available, tile drainage can reduce wetness. Using grasses and legumes in the crop rotation, stripcropping, and using cover crops help to control erosion and maintain tilth. Crops and pastures on the soil respond to lime and fertilizer.

Establishing a mixture of grasses and legumes; using proper stocking rates to maintain desirable grasses and legumes; and preventing overgrazing, especially during wet periods in spring and fall, are the major pasture management concerns. Redtop, smooth brome, fescue, and ladino clover are the suitable species for planting.

This soil is suitable for woodland, and some of the acreage is wooded. The main limitation for some species is droughtiness. The common tree species are red spruce, balsam fir, and eastern white pine.

The seasonal high water table is the main limitation of this soil for most types of community development. The high water table and rapid permeability cause a hazard of pollution to ground water from septic systems.

The capability subclass is III<sub>w</sub>.

**F<sub>r</sub>B—Fragiaquepts and Haplaquepts, 0 to 8 percent slopes.** This unit consists of deep, somewhat poorly drained, nearly level to gently sloping undifferentiated mineral soils in depressions on uplands. The areas are irregularly shaped and range from 5 to 100 acres. Stones and boulders cover 0 to 3 percent of the surface. Some areas of this unit consist of Fragiaquepts, some of Haplaquepts, and some of both. The soils were mapped together because they have no major differences in use and management. The mapped acreage of the unit is about 40 percent Fragiaquepts, 30 percent Haplaquepts, and 30 percent other soils.

Included with these soils in mapping are small areas of better drained soils on knolls and Peacham soils in depressions. Also included are areas of soils that are flooded, soils that are sandy, areas of exposed bedrock, and areas with bedrock at a depth of 5 feet or less.

The permeability in this unit is rapid to very slow.



Available water capacity is moderate. The root zone is limited by the high water table in the soils from late fall to late spring. The soils are very strongly acid to neutral in the upper part and slightly acid to mildly alkaline in the lower part. Runoff is slow.

The seasonal high water table makes these soils poorly suited to crops, but a few areas have been drained and cultivated. Using a crop rotation of grasses and legumes and an occasional row crop helps to control erosion and maintain tilth. Crops and pastures on these soils respond well to lime and fertilizer.

These soils are suited to and used for pasture. Maintaining a mixture of grasses and legumes, restricting grazing during wet periods in the spring and fall, and reducing seasonal wetness are the main management concerns. Tile drainage or open drains help to lower the seasonal water table in the soil. Redtop, reed canarygrass, and trefoil are the suitable species to plant.

This unit is suited to woodland, and a large acreage is wooded (fig. 5). The seasonal high water table restricts rooting, and thus many trees are uprooted during windy periods. The soils are more suitable for logging when they are frozen or dry. Eastern white pine, red spruce, balsam fir, hemlock, and tamarack are the common softwoods. The soils support a few stands of northern hardwoods, mainly maple.

The seasonal high water table limits these soils for community development, especially for onsite sewage disposal systems. The frost action potential is a hazard to roads and foundations.

This unit is not assigned to a capability subclass.

**Ha—Hamlin silt loam.** This soil is deep, well drained, and nearly level. It is on the highest terraces of the flood plains of the major rivers and streams. The areas are long and narrow to oval and range from 20 to 50 acres.



*Figure 5.—An area of Fragiaquepts and Haplaquepts reverting from pasture to woodland.*

The areas are subject to flooding mainly in early spring and after extended rains.

Typically the surface layer is dark brown very fine sandy loam 7 inches thick. The subsoil is dark yellowish brown very fine sandy loam 9 inches thick. The substratum is dark brown silt loam that extends to a depth of 60 inches or more.

Included with this soil in the mapping are small areas of the Udifluvents, Histic Fluvaquents, and Podunk, Teel, and Salmon soils. Also included are areas of soils with sand or gravelly sand within a depth of 30 inches and areas of sandy soils on the natural levees of the riverbank. Included soils make up about 10 to 15 percent of the unit.

The permeability of this Hamlin soil is moderate. Available water capacity is high. Roots extend to a depth of 40 inches. The soil is slightly acid to neutral in unlimed areas. Surface runoff is slow.

This soil is well suited to farming. Most of the acreage is used for silage corn and hay, and a few areas are used for truck crops. The early-spring flooding is the main limitation. Using grasses and legumes in the crop rotation and using cover crops, especially where continuous corn is planted, help to control erosion. Crops and pasture respond well to lime and fertilizer.

Establishing and maintaining a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, and preventing overgrazing are the major pasture management concerns. Redtop, smooth brome, fescue, and ladino clover are the suitable species to plant.

The soil is well suited to woodland, but few areas are wooded. The common tree species are eastern white pine and white maple.

Flooding limits this soil for community development.

The capability class is I.

**Hs—Histic Fluvaquents, frequently flooded.** This unit consists of deep, nearly level, very poorly drained soils in depressions of flood plains along rivers and streams. The areas are long and narrow to irregular in shape and range from 5 to 30 acres.

Generally these soils have a layer of thick muck over a dark surface layer 8 inches thick. The next layer is silt loam or sandy loam that extends to a depth of 60 inches or more.

Included with these soils in mapping are areas of Rumney and Searsport soils and Borohemists. Also included are areas that have a sandy texture and areas that have bedrock within a depth of 5 feet.

The permeability of this unit is moderate to rapid. Available water capacity is moderate to high. The soils are strongly acid to slightly acid in unlimed areas. Runoff is slow. The potential frost action is high.

The hazard of flooding makes these soils unsuitable for most uses other than woodland. Alder, elm, and red maple are the common tree species.

This unit is not assigned to a capability subclass.

**Le—Limerick Variant silt loam.** This soil is nearly level, deep, and poorly drained. It is on flood plains along the major streams and rivers. The areas are irregular in shape and range from 5 to 20 acres. The soil is subject to flooding during heavy rains and from spring snowmelt and fall rains.

Typically the surface layer is dark brown silt loam 8 inches thick. The substratum is mottled, grayish brown and olive brown silt loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are areas of better drained Hamlin and Teel soils on knolls and more poorly drained Histic Fluvaquents and Borohemists in small depressions. Also included are soils with a surface layer of fine sandy loam and soils with sand in the lower part of the substratum. The Hamlin and Teel soils, Histic Fluvaquents, and Borohemists make up about 15 percent of the unit. The other soils make up about 15 percent.

The permeability of this Limerick Variant soil is moderate. Available water capacity is high. Runoff is slow. Rooting is limited by a seasonal high water table at a depth of 6 to 18 inches in spring and fall. The soil is strongly acid to neutral in unlimed areas. The frost action potential is high.

The high water table and hazard of flooding make this soil poorly suited to crops, but much of the acreage is farmed. Both limitations delay cultivation in the spring. The water table also restricts rooting, and flooding is a hazard for crops during the growing season. Use of tile drainage is restricted in this soil by a lack of suitable outlets.

The soil is suitable for pasture. Establishing a mixture of grasses and legumes; using proper stocking rates to maintain desirable grasses and legumes; and preventing overgrazing, especially during wet periods in spring and fall, are the major pasture management concerns. Pastures on this soil respond to the use of lime and fertilizer. Redtop and reed canarygrass are the suitable species to plant.

Flooding and the high water table make this soil poorly suited to commercial woodland. Elm, alder, eastern white pine, and red maple are the common trees.

Flooding and the high water table limit this soil for community development.

The capability subclass is IIIw.

**LoE—Londonderry-Stratton complex, 25 to 60 percent slopes.** This complex consists of shallow, steep, well drained soils on mountains generally between elevations of 1,500 and 3,000 feet. The areas are long and narrow or irregular in shape and range from 25 to 250 acres. Areas of exposed bedrock cover less than 1 percent of the surface. The Londonderry and Stratton soils are so intermingled that it was not practical to map them separately. The complex is about 50 percent Londonderry soils, 25 percent Stratton soils, and 25 percent other soils.

Typically the Londonderry soil has a layer of fibrous organic matter 3 inches thick over a 6-inch-thick surface layer of grayish brown silt loam. Bedrock is at a depth of 9 inches.

The Stratton soil typically consists of a layer of reddish brown very flaggy silt loam and channery silt loam 15 inches thick. Bedrock is at a depth of 15 inches.

Included with these soils in mapping are areas of Ricker soils, some poorly drained soils, and soils that are more than 35 percent rock fragments. Also included are areas with slopes of less than 25 percent or more than 60 percent and areas with bedrock at a depth of 20 to 40 inches.

Permeability is moderately slow in the Londonderry soils and moderate to moderately rapid in the Stratton soils. Runoff is rapid on both, and available water capacity is very low in the Londonderry soils and high in the Stratton soils. The rooting depth is limited by the shallow depth to bedrock. The soils are extremely acid to strongly acid.

Slope, the shallow depth to bedrock, and the hazard of erosion make these soils generally unsuitable for most uses other than woodland. These soils are too cold for crops and are readily erodible when disturbed. The common trees are balsam fir, red spruce, and mountain birch. The soils are poorly suited to woodland, however, and are unsuitable for logging operations.

The capability subclass is VIIe.

**LyB—Lyman-Tunbridge fine sandy loams, very rocky, 3 to 8 percent slopes.** This complex consists of shallow and moderately deep, somewhat excessively drained and well drained, gently sloping soils on upland ridges and hills. The areas are irregular in shape and range from 8 to 100 acres. Areas of exposed bedrock cover as much as 10 percent of the surface. The Lyman and Tunbridge soils are so intermingled that it was not practical to map them separately. The complex is about 55 percent Lyman soils, 25 percent Tunbridge soils, and 10 percent other soils.

Typically the Lyman soil has a surface layer of dark brown fine sandy loam 3 inches thick. The subsurface layer is light gray fine sandy loam 4 inches thick. The subsoil is dark reddish brown and dark yellowish brown fine sandy loam 9 inches thick. Bedrock is at a depth of 16 inches.

Typically the Tunbridge soil has a surface layer of dark brown fine sandy loam 2 inches thick over a subsurface layer of grayish brown fine sandy loam 1 inch thick. The subsoil is dark reddish brown loam and yellowish brown silt loam 11 inches thick. The substratum is dark grayish brown gravelly fine sandy loam 14 inches thick. Bedrock is at a depth of 28 inches.

Included with these soils in mapping are areas of Berkshire and Marlow soils and Salmon Variant and Adams Variant soils. Also included are areas of Peru soils and poorly drained soils in depressions and drainageways, soils that are less than 8 inches deep to

bedrock, and soils that have slopes of more than 8 percent. Stones cover as much as 2 percent of the surface of some areas.

Permeability is moderate to moderately rapid in these Lyman and Tunbridge soils. Available water capacity is very low in the Lyman soils and moderate in the Tunbridge soils. The rooting depth is limited by the depth to bedrock. These soils are extremely acid to medium acid in unlimed areas.

The depth to bedrock and the areas of exposed bedrock make these soils unsuitable for crops and poorly suited to pasture. The areas of exposed rock, especially limit the use of machinery.

These soils are suitable for woodland but are limited by droughtiness and the shallow rooting depth. If logging roads are used, building them across the slope and using water bars during logging help to control erosion. The dominant tree species are red spruce, balsam fir, hemlock, beech, birch, and maple.

The depth to bedrock and the areas of exposed rock are also the main limitations of these soils for community development.

The capability subclass is IIIe for the Lyman part; IIe for the Tunbridge part.

**LyC—Lyman-Tunbridge fine sandy loams, very rocky, 8 to 15 percent slopes.** This complex consists of shallow and moderately deep, somewhat excessively drained and well drained, sloping soils on upland ridges and hills. The areas are irregular in shape and range from 10 to 100 acres. Areas of exposed bedrock cover as much as 10 percent of the surface. The Lyman and Tunbridge soils are so intermingled that it was not practical to map them separately. The complex is about 55 percent Lyman soils, 25 percent Tunbridge soils, and 10 percent other soils.

Typically the Lyman soil has a surface layer of dark brown fine sandy loam 3 inches thick. The subsurface layer is light gray fine sandy loam 4 inches thick. The subsoil is dark reddish brown and dark yellowish brown fine sandy loam 9 inches thick. Bedrock is at a depth of 16 inches.

Typically the Tunbridge soil has a surface layer of dark brown fine sandy loam 2 inches thick over a subsurface layer of grayish brown fine sandy loam 1 inch thick. The subsoil is dark reddish brown loam and yellowish brown silt loam 11 inches thick. The substratum is dark grayish brown gravelly fine sandy loam 14 inches thick. Bedrock is at a depth of 28 inches.

Included with these soils in mapping are areas of Berkshire and Marlow soils and Salmon Variant and Adams Variant soils. Also included are areas of Peru soils and poorly drained soils in depressions and drainageways, soils that are less than 8 inches deep to bedrock, and soils that have slopes of more than 15 percent or less than 8 percent. Stones cover as much as 2 percent of the surface of some areas.

Permeability is moderate to moderately rapid in these Lyman and Tunbridge soils. Available water capacity is

very low in the Lyman soils and moderate in the Tunbridge soils. The rooting depth is limited by the depth to bedrock. These soils are extremely acid to medium acid in unlimed areas.

The depth to bedrock and the areas of exposed bedrock make these soils unsuitable for crops and poorly suited to pasture. The areas of exposed rock especially limit the use of machinery.

These soils are suitable for woodland but are limited by droughtiness and the shallow rooting depth. If logging roads are used, building them across the slope and using water bars during logging help to control erosion. The dominant tree species are red spruce, balsam fir, hemlock, beech, birch, and maple.

Slope, the depth to bedrock, and the areas of exposed rock limit these soils for community development.

The capability subclass is IVe for the Lyman part; IIIe for the Tunbridge part.

**LyD—Lyman-Tunbridge fine sandy loams, very rocky, 15 to 25 percent slopes.** This complex consists of shallow and moderately deep, somewhat excessively drained and well drained, moderately steep soils on upland ridges and hills. The areas are irregular in shape and range from 10 to 150 acres. Areas of exposed bedrock cover as much as 10 percent of the surface. The Lyman and Tunbridge soils are so intermingled that it was not practical to map them separately. The complex is about 55 percent Lyman soils, 25 percent Tunbridge soils, and 10 percent other soils.

Typically the Lyman soil has a surface layer of dark brown fine sandy loam 3 inches thick. The subsoil is dark reddish brown and dark yellowish brown fine sandy loam 10 inches thick. Bedrock is at a depth of 13 inches.

Typically the Tunbridge soil has a surface layer of dark brown fine sandy loam 1 inch thick over a subsurface layer of grayish brown fine sandy loam 1 inch thick. The subsoil is dark reddish brown loam and yellowish brown silt loam 11 inches thick. The substratum is dark grayish brown gravelly fine sandy loam 13 inches thick. Bedrock is at a depth of 26 inches.

Included with these soils in mapping are areas of Berkshire and Marlow soils and Salmon Variant and Adams Variant soils. Also included are areas of Peru soils and poorly drained soils in drainageways, areas of soils that are less than 8 inches deep to bedrock, and areas that have slopes of more than 25 percent or less than 15 percent. Stones cover as much as 2 percent of the surface of some areas.

Permeability is moderate to moderately rapid in these Lyman and Tunbridge soils. Available water capacity is very low in the Lyman soils and moderate in the Tunbridge soils. The rooting depth is limited by the depth to bedrock. These soils are extremely acid to medium acid in unlimed areas.

The depth to bedrock, slope, and the areas of exposed bedrock make these soils unsuitable for crops and poorly suited to pasture. The areas of exposed rock especially limit the use of machinery.

These soils are suitable for woodland but are limited by droughtiness and the shallow rooting depth. If logging roads are used, building them across the slope and using water bars during logging help to control erosion. The dominant tree species are red spruce, balsam fir, hemlock, beech, birch, and maple.

Slope, the depth to bedrock, and the areas of exposed rock limit these soils for most types of community development.

The capability subclass is VIe for the Lyman part; IVe for the Tunbridge part.

**LyE—Lyman-Tunbridge fine sandy loams, very rocky, 25 to 60 percent slopes.** This complex consists of shallow and moderately deep, somewhat excessively drained and well drained, steep soils on upland ridges and hills. The areas are irregular in shape and range from 20 to 200 acres. Areas of exposed bedrock cover as much as 10 percent of the surface. The Lyman and Tunbridge soils are so intermingled that it was not practical to map them separately. The complex is about 60 percent Lyman soils, 20 percent Tunbridge soils, and 10 percent other soils.

Typically the Lyman soil has a surface layer of dark brown fine sandy loam 2 inches thick. The subsoil is dark reddish brown and dark yellowish brown fine sandy loam 10 inches thick. Bedrock is at a depth of 12 inches.

Typically the Tunbridge soil has a surface layer of dark brown fine sandy loam 2 inches thick. The subsoil is dark reddish brown loam and yellowish brown silt loam 11 inches thick. The substratum is dark grayish brown gravelly fine sandy loam 13 inches thick. Bedrock is at a depth of 26 inches.

Included with these soils in mapping are areas of Berkshire and Marlow soils and Salmon Variant and Adams Variant soils. Also included are areas of Peru soils in drainageways, areas of soils that are less than 8 inches deep to bedrock, and areas that have slopes of more than 60 percent or less than 25 percent.

Permeability is moderate to moderately rapid in these Lyman and Tunbridge soils. Available water capacity is very low in the Lyman soils and moderate in the Tunbridge soils. The rooting depth is limited by the depth to bedrock. These soils are extremely acid to medium acid in unlimed areas.

Slope, the depth to bedrock, and the areas of exposed rock make these soils unsuitable for most uses other than woodland. The common tree species are red spruce, balsam fir, hemlock, beech, birch, and maple. Slope and the limited rooting depth, however, are major limitations for woodland. The use of equipment is hazardous in the more sloping areas. If logging roads are used, building them across the slope and in less sloping areas and using water bars during logging help to control erosion.

The capability subclass is VIIe.

**MaB—Marlow fine sandy loam, 3 to 8 percent slopes.** This soil is deep, well drained and moderately



well drained, and gently sloping. It is on uplands. The areas are irregularly shaped and range from 10 to 50 acres.

The surface layer typically is dark yellowish brown fine sandy loam 9 inches thick. The upper part of the subsoil is olive brown and olive fine sandy loam 26 inches thick. The lower part of the subsoil is a very firm layer of very dark gray fine sandy loam 39 inches thick. The substratum is olive gray fine sandy loam that extends to a depth of 92 inches.

Included with this soil in mapping are areas of Peru, Berkshire, Tunbridge, Potsdam, and Lyman soils and some poorly drained soils. Also included are areas that have bedrock at a depth of 40 to 60 inches and areas that have slopes of less than 3 percent or more than 8 percent. The Peru, Berkshire, Tunbridge, Potsdam, and Lyman soils make up about 10 percent of the unit. Other included soils make up about 15 percent.

The permeability of this Marlow soil is moderate above the very firm part of the subsoil and slow to moderately slow in the very firm part. Available water capacity is moderate. The root depth is limited by the very firm part of the subsoil. Reaction in the soil ranges from medium acid to extremely acid in unlimed areas. Runoff is medium. The soil has a moderate frost action potential. A seasonal high water table is at a depth of 18 to 30 inches during the spring and fall.

This soil is well suited to farming, and much of the acreage is farmed (fig. 6). The hazard of erosion is the main limitation. Using grasses and legumes in the crop rotation, stripcropping, and using cover crops help to control erosion and maintain tilth. Crops and pastures on this soil respond well to lime and fertilizer. Tile drainage helps to control wetness from seeps and other wet spots.

Establishing and maintaining a mixture of grasses and legumes, using proper stocking rates to maintain



Figure 6.—An area of Marlow fine sandy loam used for hay.

desirable grasses and legumes, and preventing overgrazing are the major pasture management concerns. Clipping the pastures annually helps to control woody vegetation. Smooth brome, fescue, ladino clover, and redtop are the suitable pasture species.

The soil is suitable for woodland, and some areas are wooded. The use of culverts and water bars helps reduce erosion on logging roads. The very firm layer in the subsoil restricts root growth. Eastern white pine, eastern hemlock, red spruce, balsam fir, and northern hardwoods are the common trees.

Some areas of this soil are used for community development. The slow permeability of the soil limits its use for septic sewage disposal systems. The frost action potential is a hazard to foundations and roads, and the wet spots limit the soil as a building site.

The capability subclass is IIe.

**MaC—Marlow fine sandy loam, 8 to 15 percent slopes.** This soil is deep, well drained, and sloping. It is on uplands. The areas are irregularly shaped and range from 10 to 50 acres.

The surface layer typically is dark yellowish brown fine sandy loam 8 inches thick. The upper part of the subsoil is olive brown and olive fine sandy loam 25 inches thick. The lower part is a very firm layer of very dark gray fine sandy loam 39 inches thick. The substratum is olive gray fine sandy loam that extends to a depth of 92 inches.

Included with this soil in mapping are areas of Peru, Berkshire, Tunbridge, Potsdam, and Lyman soils and some poorly drained soils. Also included are areas that have bedrock at a depth of 40 to 60 inches and areas that have slopes of less than 8 percent or more than 15 percent. The Peru, Berkshire, Tunbridge, Potsdam, and Lyman soils make up about 10 percent of the unit. Other soils make up 15 percent.

The permeability of this Marlow soil is moderate to moderately rapid above the very firm part of the subsoil and slow to moderately slow in the very firm part. Available water capacity is moderate. The root zone is limited by the very firm part of the subsoil. Reaction of the soil ranges from medium acid to extremely acid in unlimed areas. Runoff is medium. The soil has a moderate frost action potential. A seasonal high water table is at a depth of 18 to 30 inches during the spring and fall.

This soil is suitable for crops, but slope is a major limitation. Using a crop rotation of grasses and legumes and an occasional row crop, stripcropping, and using diversions and cover crops help to control erosion and maintain tilth. Crops and pastures on this soil respond well to lime and fertilizer. Tile drainage helps to dry up seeps and other wet spots.

The soil is suited to and used for hay or pasture. Establishing a mixture of grasses and legumes; using proper stocking rates to maintain desirable grasses and legumes; and preventing overgrazing, especially during wet periods in spring and fall, are the major pasture

management concerns. Redtop, smooth brome, fescue, and ladino clover are the suitable species for planting.

Although the very firm part of the subsoil restricts root growth, the soil is suitable for woodland. If logging roads are used, building them across the slope and using culverts and water bars help to reduce erosion. White pine, hemlock, red spruce, balsam fir, and northern hardwoods are the common trees.

Wetness, slope, the frost action potential, and the slow permeability in the lower part of the soil are the main limitations of the soil for community development. The slow permeability especially limits the soil as a site for septic sewage disposal, and the frost action is a hazard to roads and foundations. Wet spots further limit the soil as a building site.

The capability subclass is IIIe.

**MaD—Marlow fine sandy loam, 15 to 25 percent slopes.** This soil is deep, well drained, and moderately steep. It is on uplands. The areas are irregularly shaped and range from 10 to 30 acres.

The surface layer typically is black fine sandy loam 1 inch thick. The upper part of the subsoil is brown fine sandy loam 22 inches thick. The lower part is a very firm layer of very dark gray fine sandy loam 39 inches thick. The substratum is olive gray fine sandy loam that extends to a depth of 92 inches.

Included with this soil in mapping are areas of Peru, Berkshire, Tunbridge, Potsdam, and Lyman soils and some poorly drained soils. Also included are areas that have bedrock at a depth of 40 to 60 inches and areas that have slopes of less than 15 percent or more than 25 percent. The Peru, Berkshire, Tunbridge, Potsdam, and Lyman soils make up about 10 percent of the unit. Other soils make up about 15 percent.

The permeability of this Marlow soil is moderate to moderately rapid above the very firm part of the subsoil and slow to moderately slow in the very firm part. Available water capacity is moderate. The root depth is limited by the very firm part of the subsoil. Reaction of the soil ranges from medium acid to extremely acid in unlimed areas. Runoff is medium. The soil has a moderate frost action potential. A seasonal high water table is at a depth of 18 to 30 inches during the spring and fall.

Slope and the hazard of erosion make this soil unsuitable for crops. The very firm part of the substratum restricts rooting and drainage during wet periods. However, the soil is suited to and used for hay and pasture. Establishing a mixture of grasses and legumes; using proper stocking rates to maintain desirable grasses and legumes; and preventing overgrazing, especially during wet periods in spring and fall, are the major pasture management concerns. Pastures on this soil respond to the use of lime and fertilizer. Redtop, smooth brome, fescue, and ladino clover are the suitable species for planting.

The soil is suitable for woodland, and much of the acreage is wooded. If logging roads are used, building

them across the slope and using culverts and water bars help to reduce erosion. The very firm part of the subsoil inhibits root growth. White pine, hemlock, red spruce, balsam fir, and northern hardwoods are the common trees.

Wetness, slope, the frost action potential, and the slow permeability in the lower part of the soil are the main limitations for community development. The slow permeability especially limits the soil as a site for septic sewage disposal, and the frost action potential is a hazard to roads and foundations. Wet spots further limit the soil as a building site.

The capability subclass is IVe.

**MrB—Marlow very stony fine sandy loam, 3 to 8 percent slopes.** This soil is deep, well drained and moderately well drained, and gently sloping. It is on uplands. Stones cover as much as 3 percent of the surface. The areas of the soil are irregular in shape and range from 10 to 60 acres.

The surface layer typically is black decomposed organic material 3 inches thick. The upper part of the subsoil is dark reddish brown and olive fine sandy loam 35 inches thick. The lower part is a very firm layer of very dark gray fine sandy loam 39 inches thick. The substratum is olive gray fine sandy loam that extends to a depth of 92 inches.

Included with this soil in mapping are areas of Peru, Berkshire, Tunbridge, Potsdam, and Lyman soils and some poorly drained soils. Also included are areas where stones cover more than 3 percent of the surface, areas that have bedrock at a depth of 40 to 60 inches, and areas that have slopes of less than 3 percent or more than 8 percent. The Peru, Berkshire, Tunbridge, Potsdam, and Lyman soils make up about 10 percent of the unit. Other soils make up about 15 percent.

The permeability of this Marlow soil is moderate above the very firm part of the substratum and slow to moderately slow in the very firm part. Available water capacity is moderate. The root depth is limited by the very firm part of the subsoil. Reaction of the soil ranges from medium acid to extremely acid in unlimed areas. Runoff is medium. The soil has a moderate frost action potential. A seasonal high water table is at a depth of 18 to 30 inches in the fall and spring.

The stones on the surface make the soil unsuitable for crops and restrict the use of farm machinery. The soil is further limited for crops by slope and the very firm layer in the subsoil, which restricts rooting and drainage during wet periods.

The soil is suitable for unimproved pasture, but the stones make pasture renovation impractical.

Although the firm part of the subsoil restricts rooting, the soil is suited to and used for woodland. If logging roads are used, building them across the slope and using culverts and water bars help to reduce erosion. White pine, hemlock, red spruce, balsam fir, and northern hardwoods are the common trees.

Wetness, slope, the stones on the surface, the frost action potential, and the slow permeability in the lower part of the soil are the main limitations for community development. The slow permeability especially limits the soil as a site for septic sewage disposal, and the frost action potential is a hazard to roads and foundations. Wet spots further limit the soil as a building site.

The capability subclass is VIs.

**MrC—Marlow very stony fine sandy loam, 8 to 15 percent slopes.** This soil is deep, well drained, and sloping. It is on uplands. Stones cover as much as 3 percent of the surface. The areas of this soil are irregular in shape and range from 10 to 60 acres.

The surface layer typically is black organic material 3 inches thick. The upper part of the subsoil is dark reddish brown and olive fine sandy loam 30 inches thick. The lower part is a very firm layer of very dark gray fine sandy loam 39 inches thick. The substratum is olive gray fine sandy loam that extends to a depth of 92 inches.

Included with this soil in mapping are areas of Peru, Berkshire, Tunbridge, Potsdam, and Lyman soils and some poorly drained soils. Also included are areas where stones cover more than 3 percent of the surface, areas that have bedrock at a depth of 40 to 60 inches, and areas that have slopes of less than 8 percent or more than 15 percent. The Peru, Berkshire, Tunbridge, Potsdam, and Lyman soils make up about 10 percent of the unit. Other soils make up about 15 percent.

The permeability of this Marlow soil is moderate to moderately rapid above the very firm part of the subsoil and slow to moderately slow in the very firm part. Available water capacity is moderate. The root depth is limited by the very firm part of the subsoil. Reaction of the soil ranges from medium acid to extremely acid in unlimed areas. Runoff is medium. The soil has a moderate frost action potential. A seasonal high water table is at a depth of 18 to 30 inches during the spring and fall.

The stones on the surface make this soil unsuitable for crops and restrict the use of farm machinery. The soil is further limited for crops by slope and the very firm layer in the subsoil, which restricts rooting and drainage during wet periods.

The soil is suitable for unimproved pasture, but the stones and slope make pasture renovation impractical.

Although the very firm layer in the subsoil restricts rooting, the soil is suited to and used for woodland. If logging roads are used, building them across the slope and using culverts and water bars help to reduce erosion. White pine, hemlock, red spruce, balsam fir, and northern hardwoods are the common trees.

Wetness, slope, the stones on the surface, the frost action potential, and the slow permeability in the lower part of the soil are the main limitations for community development. The slow permeability especially limits the soil as a site for septic sewage disposal, and the frost action potential is a hazard to roads and foundations. Wet spots further limit the soil as a building site.

The capability subclass is VIs.

**MrD—Marlow very stony fine sandy loam, 15 to 25 percent slopes.** This soil is deep, well drained, and moderately steep. It is on uplands. Stones cover as much as 3 percent of the surface. The areas of this soil are irregular in shape and range from 20 to 100 acres.

The surface layer typically is black organic material 2 inches thick. The upper part of the subsoil is dark reddish brown and olive fine sandy loam 34 inches thick. The lower part is a very firm layer of very dark gray fine sandy loam 39 inches thick. The substratum is olive gray fine sandy loam that extends to a depth of 92 inches.

Included with this soil in mapping are areas of Peru, Berkshire, Tunbridge, Potsdam, and Lyman soils and some poorly drained soils. Also included are areas where stones cover more than 3 percent of the surface, areas that have bedrock at a depth of 40 to 60 inches, and areas that have slopes of less than 15 percent or more than 25 percent. The Peru, Berkshire, Tunbridge, Potsdam, and Lyman soils make up about 10 percent of the unit. Other soils make up about 15 percent.

The permeability of this Marlow soil is moderate to moderately rapid above the very firm part of the substratum and slow to moderately slow in the very firm part. Available water capacity is moderate. The root depth is limited by the very firm part of the subsoil. Reaction of the soil ranges from medium acid to extremely acid in unlimed areas. Runoff is medium. The soil has a moderate frost action potential. A seasonal high water table is at a depth of 18 to 30 inches during the spring and fall.

Slope, the stones on the surface, and the firm layer in the subsoil make this soil unsuitable for crops and poorly suited to pasture.

Although the very firm part of the subsoil restricts rooting, the soil is suited to and used for woodland. If logging roads are used, building them across the slope and using culverts and water bars help to reduce erosion. White pine, hemlock, red spruce, balsam fir, and northern hardwoods are the common trees.

Wetness, slope, the stones on the surface, the frost action potential, and the slow permeability in the lower part of the soil are the main limitations for community development. The slow permeability especially limits the soil as a site for septic sewage disposal, and the frost action potential is a hazard to roads and foundations. Wet spots further limit the soil as a building site.

The capability subclass is VIIs.

**On—Ondawa fine sandy loam.** This soil is deep, well drained, and nearly level. It is on flood plains of major rivers and streams. The areas are long and narrow to oval and range from 5 to 80 acres. The areas are subject to flooding after heavy, extended rains.

Typically this soil has a surface layer of dark yellowish brown fine sandy loam 6 inches thick. The subsoil is brown fine sandy loam 34 inches thick. The substratum

is dark yellowish brown loamy sand that extends to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Udifluvents and Podunk, Rumney, and Adams soils. Also included are areas of silty soils and areas of sandy soils. The Podunk, Rumney, and Adams soils and Udifluvents make up about 10 to 15 percent of the unit. Other included soils make up about 15 to 20 percent.

The permeability of this Ondawa soil is moderately rapid in the upper layers and rapid in the underlying material. Available water capacity is high. The soil is very strongly acid to slightly acid in unlimed areas. Runoff is medium.

This soil is well suited to cultivated crops. Much of the acreage is used for silage corn, and a few areas are used for truck crops. Early-spring flooding is the main limitation. Using grasses and legumes in the crop rotation and using cover crops during the fall and winter, especially if continuous row crops are grown, help to control erosion and maintain tilth. Crops and pastures on this soil respond to lime and fertilizer.

The soil is suited to and used for hay and pasture. Establishing and maintaining a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, and preventing overgrazing are the major pasture management concerns. Redtop, smooth brome, fescue, and ladino clover are the suitable species to plant.

The soil is well suited to woodland, but very little acreage is used for trees. The common tree species are eastern white pine, red spruce, larch, and balsam fir.

Flooding is the main limitation of the soil for community development.

The capability class is I.

**PaA—Peacham stony muck, 0 to 5 percent slopes.**

This soil is deep, very poorly drained, and nearly level to gently sloping. It is in depressions on uplands. The areas are irregular in shape and range from 5 to 20 acres. Stones cover as much as 3 percent of the surface.

The surface layer typically is black muck 7 inches thick. The subsoil is greenish gray silt loam 6 inches thick. The substratum is very firm mottled, greenish gray fine sandy loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are areas of Fragiaquepts, Haplaquepts, and Borohemists. Also included are areas near streams of soils with a sandy surface layer. The Fragiaquepts, Haplaquepts, and Borohemists make up about 15 to 20 percent of the unit. Other soils make up about 15 to 20 percent.

The permeability of this Peacham soil is moderate above the substratum and slow or very slow within the substratum. Available water capacity is very low. The rooting depth is limited by the very firm substratum and a high water table at or near the surface most of the year. This soil is medium acid to neutral in unlimed areas. Runoff is very slow.



The high water table and stones on the surface make this soil unsuitable for most uses other than unimproved pasture or low quality, water-tolerant trees. Many areas are in frost pockets, which severely restricts the growing season.

The capability subclass is VIIc.

**PeB—Peru fine sandy loam, 3 to 8 percent slopes.**

This soil is deep, moderately well drained to somewhat poorly drained, and gently sloping. It is on uplands. The areas are irregular in shape and range from 5 to 50 acres.

The surface layer typically is very dark grayish brown fine sandy loam 8 inches thick. The subsoil is dark reddish brown and mottled, olive brown fine sandy loam 20 inches thick. The substratum is very firm mottled, very dark grayish brown fine sandy loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Marlow and Berkshire soils on knolls and areas of poorly drained soils in depressions. Also included are areas of soils that do not have a very firm substratum, areas that have slopes of less than 3 percent or more than 8 percent, and areas that have bedrock within a depth of 5 feet. The Marlow and Berkshire soils make up about 10 percent of the unit. Other soils make up about 25 percent.

The permeability of this Peru soil is moderate above the substratum and moderately slow to slow in the substratum. Available water capacity is moderate. The rooting depth is limited by the very firm substratum and by a seasonal high water table from fall to late spring. The soil is medium acid to extremely acid in unlimed areas. Runoff is medium. This soil has a high frost action potential. A seasonal high water table is at a depth of 12 to 24 inches during the spring and fall.

This soil is suitable for farming, and some areas are farmed. The seasonal high water table is the main limitation. Using grasses and legumes in the crop rotation, stripcropping, and using cover crops help to control erosion and maintain tilth. Tile drainage helps to control wetness. Crops and pastures on this soil respond well to lime and fertilizer.

Establishing a mixture of grasses and legumes; using proper stocking rates to maintain desirable grasses and legumes; and preventing overgrazing, especially during wet periods in spring and fall, are the major pasture management concerns. Redtop, smooth brome, fescue, and ladino clover are the suitable species for planting.

This soil is suited to and used for woodland. The high water table is the main limitation. It restricts the use of logging roads during wet periods and limits the root zone of trees. The limited root zone in turn causes the uprooting of trees during windy periods. Using water bars and culverts helps to control erosion. Northern hardwoods, red spruce, balsam fir, and hemlock are the common trees.

Some areas of this soil are used for community development. The main limitations for this use are the

high water table, the very firm substratum, and the frost action potential. The frost action potential is a hazard to foundations and roads. The high water table and very firm substratum limit the soil as a building site and as a site for septic systems.

The capability subclass is IIw.

**PeC—Peru fine sandy loam, 8 to 15 percent slopes.**

This soil is deep, moderately well drained to somewhat poorly drained, and sloping. It is on uplands. The areas are irregular in shape and range from 5 to 50 acres.

The surface layer typically is very dark grayish brown fine sandy loam 7 inches thick. The subsoil is dark reddish brown and mottled, olive brown fine sandy loam 20 inches thick. The substratum is very firm mottled, very dark grayish brown fine sandy loam to a depth of 60 inches or more.

Included with this soil in the mapping are small areas of Marlow and Berkshire soils on knolls and poorly drained soils in depressions. Also included are areas of soils that do not have a very firm substratum, areas that have slopes of less than 8 percent or more than 15 percent, and areas that have bedrock within a depth of 5 feet. The Marlow and Berkshire soils make up about 10 percent of the unit. Other soils make up about 10 percent.

The permeability of this Peru soil is moderate above the very firm substratum and slow in the very firm substratum. Available water capacity is moderate. The rooting depth is limited by the very firm substratum and by a seasonal high water table at a depth of 12 to 24 inches from fall to late spring. The soil is medium acid to very strongly acid in unlimed areas. Runoff is medium. This soil has a high frost action potential.

This soil is suitable for farming, and some areas are farmed. Slope and the seasonal high water table are the main limitations. Using grasses and legumes in the crop rotation, stripcropping, and using cover crops help to control erosion and maintain tilth. Tile drainage helps to control wetness. Crops and pastures on this soil respond well to lime and fertilizer.

Establishing a mixture of grasses and legumes; using proper stocking rates to maintain desirable grasses and legumes; and preventing overgrazing, especially during wet periods in spring and fall, are the major pasture management concerns. Redtop, smooth brome, fescue, and ladino clover are the suitable species for planting.

This soil is suited to and used for woodland. The high water table is the main limitation. It restricts the use of logging roads during wet periods and limits the root zone of trees. The limited root zone in turn causes the uprooting of trees during windy periods. Using water bars and culverts helps to control erosion. Northern hardwoods, red spruce, balsam fir, and hemlock are the common trees.

Some areas of this soil are used for community development. The main limitations for this use are the

high water table, the very firm substratum, and the frost action potential. The frost action potential is a hazard to foundations and roads. The high water table and very firm substratum limit the soil as a building site and as a site for septic systems.

The capability subclass is IIIe.

**PeD—Peru fine sandy loam, 15 to 25 percent slopes.** This soil is deep, moderately well drained to somewhat poorly drained, and moderately steep. It is on uplands. The areas are irregular in shape and range from 10 to 50 acres.

The surface layer typically is very dark grayish brown fine sandy loam 6 inches thick. The subsoil is dark reddish brown and mottled, olive brown fine sandy loam 19 inches thick. The substratum is very firm mottled, very dark grayish brown fine sandy loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Marlow and Berkshire soils on knolls and poorly drained soils in drainageways. Also included are areas of soils that do not have a very firm substratum and areas that have bedrock within a depth of 5 feet. The Marlow and Berkshire soils make up about 15 percent of the unit. Other included soils make up about 20 percent.

The permeability of this Peru soil is moderate above the very firm substratum and moderately slow to slow in the very firm substratum. Available water capacity is moderate. The rooting depth is limited by the substratum and by a seasonal high water table at a depth of 12 to 24 inches from fall to late spring. The soil is medium acid to extremely acid in unlimed areas. Runoff is medium. This soil has a high frost action potential.

Slope and the seasonal high water table make this soil unsuitable for crops. However, the soil is suited to and used for hay and pasture. Establishing a mixture of grasses and legumes; using proper stocking rates to maintain desirable grasses and legumes; and preventing overgrazing, especially during wet periods in spring and fall, are the major pasture management concerns. Redtop, smooth brome, fescue, and ladino clover are the suitable species for planting.

This soil is suited to and used for woodland. The high water table is the main limitation. It restricts the use of logging roads during wet periods and limits the root zone of trees. The limited root zone in turn causes the uprooting of trees during windy periods. Using water bars and culverts helps to control erosion. Northern hardwoods, red spruce, balsam fir, and hemlock are the common trees.

Some areas of this soil are used for community development. The main limitations for this use are slope, the high water table, the very firm substratum, and the frost action potential. The frost action potential is a hazard to foundations and roads. Slope, the high water table, and the very firm substratum limit the soil as a building site and as a site for septic systems.

The capability subclass is IVe.

**PfB—Peru very stony fine sandy loam, 3 to 8 percent slopes.** This soil is deep, moderately well drained to somewhat poorly drained, and gently sloping. It is on uplands. Stones cover as much as 3 percent of the surface. The areas of the soil are irregular in shape and range from 5 to 40 acres.

The surface layer typically is very dark grayish brown fine sandy loam 2 inches thick. The subsoil is dark reddish brown and mottled, olive brown fine sandy loam 26 inches thick. The substratum is very firm very dark grayish brown fine sandy loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Marlow and Berkshire soils on knolls and areas where stones cover more than 3 percent of the surface. Also included are small areas of poorly drained soils in depressions, soils that do not have a very firm substratum, and soils that have bedrock within a depth of 5 feet. The Marlow and Berkshire soils make up about 10 percent of the unit. Other soils make up about 15 percent.

The permeability of this Peru soil is moderate above the very firm substratum and moderately slow to slow in the very firm substratum. Available water capacity is moderate. The rooting depth is limited by the very firm substratum and by a seasonal high water table at a depth of 12 to 24 inches from fall to late spring. The soil is medium acid to extremely acid in unlimed areas. Runoff is medium. This soil has a high frost action potential.

The stones on the surface, the seasonal high water table, and the very firm substratum limit this soil for farming. The soil is suitable for unimproved pasture, but the stones on the surface restrict equipment use.

This soil is suited to and used for woodland. The high water table is the main limitation. It restricts the use of logging roads during wet periods and limits the root zone of trees. The limited root zone in turn causes the uprooting of trees during windy periods. Using water bars and culverts helps to control erosion. Northern hardwoods, red spruce, balsam fir, and hemlock are the common trees.

Some areas of this soil are used for community development. The main limitations for this use are the stones on the surface, the high water table, the very firm substratum, and the frost action potential. The frost action potential is a hazard to foundations and roads. The high water table and the impervious substratum limit the soil as a building site and as a site for septic systems.

The capability subclass is VI.

**PfC—Peru very stony fine sandy loam, 8 to 15 percent slopes.** This soil is deep, moderately well drained to somewhat poorly drained, and sloping. It is on uplands. Stones cover as much as 3 percent of the surface. The areas of this soil are irregular in shape and range from 10 to 100 acres.

The surface layer typically is very dark grayish brown fine sandy loam 2 inches thick. The subsoil is dark reddish brown and mottled, olive brown fine sandy loam 26 inches thick. The substratum is very firm mottled, very dark grayish brown fine sandy loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Marlow and Berkshire soils on knolls and poorly drained soils in depressions. Also included are areas where stones cover more than 3 percent of the surface, areas of soils that do not have a firm substratum, and areas that have bedrock within a depth of 5 feet. The Marlow and Berkshire soils make up about 10 percent of the unit. Other soils make up about 20 percent.

The permeability of this Peru soil is moderate above the very firm substratum and moderately slow to slow in the very firm substratum. Available water capacity is moderate. The rooting depth is limited by the very firm substratum and by a seasonal high water table at a depth of 12 to 24 inches from fall to late spring. The soil is medium acid to extremely acid in unlimed areas. Runoff is medium. This soil has a high frost action potential.

The stones on the surface, the seasonal high water table, and the very firm substratum make this soil unsuitable for crops and hay and restrict the use of farm equipment. The soil is suited to and used for unimproved pasture.

This soil is suited to and used for woodland. The high water table is the main limitation. It restricts the use of logging roads during wet periods and limits the root zone of trees. The limited root zone in turn causes the uprooting of trees during windy periods. Using water bars and culverts helps to control erosion. Northern hardwoods, red spruce, balsam fir, and hemlock are the common trees.

Some areas of this soil are used for community development. The main limitations for this use are the stones on the surface, the high water table, the very firm substratum, and the frost action potential. The frost action potential is a hazard to foundations and roads. The high water table and the very firm substratum limit the soil as a building site and as a site for septic systems.

The capability subclass is VIs.

**PfD—Peru very stony fine sandy loam, 15 to 25 percent slopes.** This soil is deep, moderately well drained to somewhat poorly drained, and moderately steep. It is on uplands. Stones cover as much as 3 percent of the surface. The areas of the soil are irregular in shape and range from 5 to 40 acres.

The surface layer typically is very dark grayish brown fine sandy loam 2 inches thick. The subsoil is dark reddish brown and mottled, olive brown fine sandy loam 23 inches thick. The substratum is very firm mottled, very dark grayish brown fine sandy loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Marlow and Berkshire soils on knolls and poorly drained soils in depressions. Also included are areas where stones cover more than 3 percent of the surface, areas of soils that do not have a firm substratum, and areas that have bedrock within a depth of 5 feet. The Marlow and Berkshire soils make up about 15 percent of the unit. Other soils make up about 20 percent.

The permeability of this Peru soil is moderate above the very firm substratum and moderately slow to slow in the very firm substratum. Available water capacity is moderate. The rooting depth is limited by the very firm substratum and by a seasonal high water table from fall to late spring. The soil is medium acid to extremely acid in unlimed areas. Runoff is medium. This soil has a high frost action potential. A seasonal high water table is at a depth of 12 to 24 inches during the spring and fall.

The stones on the surface, slope, the seasonal high water table, and the very firm substratum make this soil unsuitable for most types of farming other than unimproved pasture.

This soil is suited to and used for woodland. The high water table is the main limitation. It restricts the use of logging roads during wet periods and limits the root zone of trees. The limited root zone in turn causes the uprooting of trees during windy periods. Using water bars and culverts helps to control erosion. Slope and the stones on the surface limit the use of equipment. Northern hardwoods, red spruce, balsam fir, and hemlock are the common trees.

The main limitations of the soil for community development are slope, the high water table, the very firm substratum, the frost action potential, and the stones on the surface. The frost action potential is a hazard to foundations and roads. Slope, the high water table, and the very firm substratum limit the soil as a building site and as a site for septic systems.

The capability subclass is VIs.

**Po—Podunk fine sandy loam.** This soil is nearly level, deep, and moderately well drained. It is on flood plains along major streams and rivers. The areas are long and narrow to irregular in shape and range from 15 to 50 acres. The areas are subject to occasional flooding during heavy, brief rains and are subject to extended flooding from spring snowmelt and intensive fall rains.

The surface layer typically is dark brown fine sandy loam 11 inches thick. The subsoil is olive brown, mottled fine sandy loam 21 inches thick. The substratum is olive, mottled loamy fine sand and coarse sand that extend to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Teel and Rumney soils in depressions and Ondawa soils on knolls. Also included are areas that have a surface layer of very fine sandy loam or silt loam. The Teel, Rumney, and Ondawa soils make up about 10 percent of the unit. Other included soils make up 20 percent.

The permeability of this Podunk soil is moderately rapid in the surface layer and subsoil and rapid in the

substratum. Runoff is slow, and available water capacity is moderate in the surface layer and subsoil and low in the substratum. A seasonal high water table is at a depth of about 2 feet in the spring and fall. The soil is very strongly acid to slightly acid in unlimed areas.

This soil is suited to farming, and much of the acreage is farmed. The seasonal high water table and flooding are the main limitations. Seasonal wetness impedes rooting and delays cultivation in the spring, and drainage is needed in some cultivated areas. Using grasses and legumes in the crop rotation and using cover crops help to control erosion and maintain tilth. Crops and pastures respond well to lime and fertilizer.

Maintaining a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, and preventing overgrazing are the major pasture management concerns. Redtop, fescue, smooth brome, and ladino clover are the suitable species to plant.

This soil is well suited to woodland, but few areas are wooded. The native species include eastern white pine, red spruce, and red maple.

Flooding and the seasonal high water table limit the soil for community development.

The capability subclass is llw.

**PtB—Potsdam silt loam, 3 to 8 percent slopes.** This soil is gently sloping, deep, and well drained to moderately well drained. It is on uplands at an elevation of 800 to 1,200 feet. The areas are irregular in shape and range from 10 to 50 acres.

The surface layer typically is black silt loam 3 inches thick. The subsurface layer is gray silt loam 4 inches thick. The upper part of the subsoil is dark reddish brown and light yellowish brown silt loam 16 inches thick. The lower part is very firm, olive gray fine sandy loam 25 inches thick. The substratum is grayish brown fine sandy loam to a depth of 70 inches or more.

Included with this soil in mapping are areas of Salmon, Berkshire, and Marlow soils; areas that do not have a firm underlying layer; and areas that have a few stones on the surface. Also included are soils with mottles in the upper part of the subsoil. The Salmon, Berkshire, and Marlow soils make up about 10 percent of the unit. Other soils make up about 20 percent.

The permeability of this Potsdam soil is moderate in the upper layers and slow in the very firm layer. Runoff is medium. Available water capacity is moderate. The rooting depth is impeded by the very firm layer and by a seasonal high water table at a depth of 18 to 30 inches in spring and fall. The soil is medium acid to extremely acid in unlimed areas. It has a moderate frost action potential.

This soil is suited to and used for farming. The hazard of erosion is the major limitation. Using grasses and legumes in the crop rotation, stripcropping, and using diversions and cover crops help to control erosion. Tile drainage helps to reduce seasonal wetness and to drain

seeps and other wet spots. Crops and pastures on this soil respond well to lime and fertilizer.

Maintaining a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, and preventing overgrazing are the major pasture management concerns. Redtop, fescue, smooth brome, and ladino clover are the suitable species to plant.

The soil is suited to woodland, and much of the acreage is wooded. If logging roads are used, building them on less sloping areas and across the slope helps to reduce erosion. Red spruce, beech, birch, and maple are the common trees.

The main limitations of this soil for community development are the slow permeability in the lower part of the soil, the frost action potential, and seasonal wetness. The frost action potential is a hazard to roads and foundations, and the seasonal wetness and slow permeability restrict the soil as a site for septic systems.

The capability subclass is lle.

#### **PtC—Potsdam silt loam, 8 to 15 percent slopes.**

This soil is sloping, deep, and well drained to moderately well drained. It is on uplands generally at an elevation of 800 to 1,200 feet. The areas are irregular in shape and range from 10 to 100 acres.

The surface layer typically is black silt loam 3 inches thick. The subsurface layer is gray silt loam 4 inches thick. The upper part of the subsoil is dark reddish brown and light yellowish brown silt loam 16 inches thick. The lower part is very firm, olive gray fine sandy loam 25 inches thick. The substratum is grayish brown fine sandy loam to a depth of 70 inches or more.

Included with this soil in mapping are areas of Salmon, Berkshire, and Marlow soils. Also included are areas of soils that do not have a very firm underlying layer and areas that have a few stones on the surface. The Salmon, Berkshire, and Marlow soils make up about 10 percent of the unit. Other soils make up about 20 percent.

The permeability of this Potsdam soil is moderate in the upper layers and slow in the very firm layer. Runoff is medium. Available water capacity is moderate. The rooting depth is impeded by the very firm layer and by a seasonal high water table at a depth of 18 to 30 inches in spring and fall. The soil is medium acid to very strongly acid in unlimed areas. It has a moderate frost action potential.

This soil is suitable for farming, and much of the acreage is farmed. The hazard of erosion is the major limitation for crops. Using a crop rotation of grasses and legumes and an occasional row crop, stripcropping, and using diversions and cover crops help to control erosion. Tile drainage helps to reduce seasonal wetness and helps to drain seeps and other wet spots. Crops and pastures on this soil respond well to lime and fertilizer.

Maintaining a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and

legumes, and preventing overgrazing are the major pasture management concerns. Redtop, fescue, smooth brome, and ladino clover are the suitable species to plant.

The soil is suited to and used for woodland. If logging roads are used, building them on less sloping areas and across the slope helps to reduce erosion. The common trees are spruce, beech, birch, and maple.

The main limitations of this soil for community development are the slow permeability in the lower part of the soil, the frost action potential, and seasonal wetness. The frost action potential is a hazard to roads and foundations, and the seasonal wetness and slow permeability restrict the soil as a site for septic systems.

The capability subclass is IIIe.

**PtD—Potsdam silt loam, 15 to 25 percent slopes.**

This soil is moderately steep, deep, and well drained to moderately well drained. It is on uplands generally at an elevation of 800 to 1,200 feet. The areas are irregular in shape and range from 10 to 30 acres.

The surface layer typically is black silt loam 3 inches thick. The subsurface layer is gray silt loam 4 inches thick. The upper part of the subsoil is dark reddish brown and light yellowish brown silt loam 16 inches thick. The lower part is very firm, olive gray fine sandy loam 25 inches thick. The substratum is grayish brown fine sandy loam to a depth of 70 inches or more.

Included with this soil in mapping are areas of Salmon, Berkshire, and Marlow soils. Also included are areas of soils that do not have a very firm layer and areas that have a few stones on the surface. The Salmon, Berkshire, and Marlow soils make up about 10 percent of the unit. Other soils make up about 10 percent.

The permeability of this Potsdam soil is moderate in the upper layers and slow in the very firm layer. Runoff is medium. Available water capacity is moderate. The rooting depth is impeded by the very firm layer and by a seasonal high water table at a depth of 18 to 30 inches in spring and fall. The soil is medium acid to extremely acid in unlimed areas. It has a moderate frost action potential.

Slope and the hazard of erosion make this soil unsuitable for crops and restrict the use of some types of equipment. The soil is suitable for hay and pasture, however, and much of the acreage is pastured. Maintaining a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, and preventing overgrazing are the major pasture management concerns. Pastures on this soil respond to the use of lime and fertilizer. Redtop, fescue, smooth brome, and ladino clover are the suitable species to plant.

This soil is suited to and used for woodland. If logging roads are used, building them across the slope and using water bars help to control erosion. The common trees are red spruce, beech, birch, and maple.

The main limitations of this soil for community development are slope, the slow permeability in the

lower part of the soil, the frost action potential, and seasonal wetness. The frost action potential is a hazard to roads and foundations, and the seasonal wetness and slow permeability restrict the soil as a site for septic systems.

The capability subclass is IVe.

**RkE—Ricker peat, very rocky, 15 to 80 percent slopes.**

This organic soil is shallow, steep, and well drained. It is at the highest elevations on the Green Mountains. The areas are irregular in shape and range from 25 to 75 acres. Areas of exposed bedrock cover as much as 10 percent of the surface.

Typically the surface layer is dark reddish brown peat about 2 inches thick. The lower layers are black mucky peat and muck 5 inches thick underlain by dark bluish gray very channery silt loam 2 inches thick. Bedrock is at a depth of 9 inches.

Included with this soil in mapping are small areas of Stratton and Londonderry soils. Also included are soils with slopes of less than 15 percent.

The permeability of this Ricker soil is moderate to moderately rapid. Reaction is extremely acid to very strongly acid. Runoff is moderate, and available water capacity is moderate. The rooting depth is limited by the depth to bedrock.

The depth to bedrock, slope, and organic matter content make this soil generally unsuitable for most uses. These soils are too cold for crops and are readily erodible. Balsam fir and shrubs cover most areas.

The capability subclass is VIIe.

**Ru—Rumney fine sandy loam.** This soil is nearly level, deep, and poorly drained. It is on flood plains along major streams and rivers. The areas are long and narrow to irregular in shape and range from 5 to 40 acres. These areas are subject to flooding during heavy, brief rains and are subject to extensive flooding from spring snowmelt and fall rains.

The surface layer typically is very dark grayish brown fine sandy loam 10 inches thick. The subsoil is mottled, dark grayish brown fine sandy loam 25 inches thick. The substratum is mottled dark grayish brown and olive brown stratified loamy sand and loamy fine sand to a depth of 60 inches or more.

Included with this soil in mapping are areas of Ondawa and Podunk soils on knolls and Histic Fluvaquents in small depressions. Also included are areas of soils with a surface layer of silt loam and soils with a sandy subsoil. The Ondawa and Podunk soils and Histic Fluvaquents make up about 15 percent of the unit. Other soils make up about 15 percent.

The permeability of this Rumney soil is moderately rapid above the substratum and rapid in the substratum. Available water capacity is high, and runoff is slow. The rooting depth is impeded by a seasonal high water table that is at the surface during the spring and fall. The soil is very strongly acid to slightly acid in unlimed areas. It has a high frost action potential.

This soil is poorly suited to crops; it is better suited to hay. Many areas are farmed. Flooding and the high water table are the main limitations for farming. Although flooding occurs primarily in the spring and fall, some low-lying areas are subject to frequent flooding, making them unsuitable for crops. Tile drainage can be used where suitable outlets are available. Crops and pastures on this soil respond well to lime and fertilizer.

Establishing and maintaining suitable grass species; using pasture rotation; and preventing overgrazing, especially during wet periods in spring and fall, are major pasture management concerns.

The hazard of flooding and the seasonal high water table limit this soil for woodland or community development. The common trees on the soil are elm, alder, and red maple.

The capability subclass is IIIw.

**SaB—Salmon very fine sandy loam, 3 to 8 percent slopes.** This soil is deep, well drained, and gently sloping. It is in valleys generally above an elevation of 800 feet. The areas are irregular in shape and range from 5 to 25 acres.

Typically this soil has a surface layer of dark brown very fine sandy loam 4 inches thick. The subsurface layer is light gray very fine sandy loam 3 inches thick. The subsoil is dark reddish brown and olive very fine sandy loam 19 inches thick. The substratum is olive very fine sandy loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are areas of Boothbay, Scantic Variant, Potsdam, Swanville, and eroded Salmon soils. Also included are areas that have a few stones on the surface and areas that have slopes of more than 8 percent or less than 3 percent. The Boothbay, Scantic Variant, Potsdam, Swanville, and eroded Salmon soils make up about 15 percent of the unit. Other soils make up about 10 percent.

The permeability of this Salmon soil is moderate. Available water capacity is high. Runoff is medium. The soil is extremely acid to medium acid in unlimed areas. It has a high frost action potential.

This soil is well suited to cultivated crops, and some of the acreage is farmed. The hazard of erosion is the main limitation. Using grasses and legumes in the crop rotation, strip cropping, and using cover crops help to reduce erosion. Crops and pastures on this soil respond well to lime and fertilizer.

Establishing and maintaining a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, and preventing overgrazing are the major pasture management concerns. Clipping the pastures annually helps to control woody vegetation. Smooth brome, fescue, ladino clover, and redtop are the suitable pasture species.

The soil is suited to and used for woodland. Erosion on roads and skid trails is the main limitation. If logging roads are used, building them across the slope and on

the less sloping areas and using culverts and water bars help to reduce erosion. The common trees are northern hardwoods, eastern white pine, red spruce, and hemlock.

Some areas of this soil are used for community development. The main limitation for this use is the high frost action potential.

The capability subclass is IIe.

**SaB2—Salmon very fine sandy loam, 3 to 8 percent slopes, eroded.** This soil is deep, well drained, and gently sloping. It is in valleys generally below an elevation of 800 feet. The areas are irregular in shape and range from 5 to 25 acres.

Typically this soil has a surface layer of light olive brown very fine sand loam 8 inches thick. The subsoil is olive brown and olive very fine sandy loam 13 inches thick. The substratum is olive very fine sandy loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are areas of Boothbay, Scantic Variant, Potsdam, and Swanville soils and Salmon soils that are not eroded. Also included are soils with a surface layer and subsoil of loamy fine sand or fine sandy loam, areas that have a few stones on the surface, and areas that have slopes of more than 8 percent or less than 3 percent. The Boothbay, Scantic Variant, Potsdam, and Swanville soils and noneroded Salmon soils make up about 15 percent of the unit. Other soils make up about 10 percent.

The permeability of this Salmon soil is moderate. Available water capacity is high, and runoff is medium. The soil is extremely acid to medium acid in unlimed areas. It has a high frost action potential.

This soil is well suited to farming, and most areas are farmed. The hazard of erosion is the main limitation. Using grasses and legumes in the crop rotation, strip cropping, and using cover crops help to reduce erosion. Crops and pastures on this soil respond well to lime and fertilizer.

Establishing and maintaining a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, and preventing overgrazing are the major pasture management concerns. Clipping pastures annually helps to control woody vegetation. Smooth brome, fescue, ladino clover, and redtop are the suitable pasture species.

The soil is suitable for woodland, and a few areas are wooded. Erosion on roads and skid trails is the main limitation. If logging roads are used, building them across the slope and on the less sloping areas and using culverts and water bars help to reduce erosion. The common trees are northern hardwoods, eastern white pine, red spruce, and hemlock.

Some areas of this soil are used for community development. The main limitation for this use is the high frost action potential.

The capability subclass is IIe.

**SaC—Salmon very fine sandy loam, 8 to 15 percent slopes.** This soil is deep, well drained, and



sloping. It is in valleys generally above an elevation of 800 feet. The areas are irregular in shape and range from 10 to 40 acres.

Typically this soil has a surface layer of dark brown very fine sandy loam 4 inches thick. The subsurface layer is light gray very fine sandy loam 2 inches thick. The subsoil is dark reddish brown and olive very fine sandy loam 19 inches thick. The substratum is olive very fine sandy loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are areas of Boothbay, Scantic Variant, Potsdam, and Swanville soils and eroded Salmon soils. Also included are areas that have a few stones on the surface and areas that have slopes of more than 15 percent or less than 8 percent. The Boothbay, Scantic Variant, Potsdam, Swanville, and eroded Salmon soils make up about 15 percent of the unit. Other soils make up about 10 percent.

The permeability of this Salmon soil is moderate. Available water capacity is high, and runoff is rapid. The soil is extremely acid to medium acid in unlimed areas. It has a high frost action potential.

This soil is suitable for farming, and some areas are farmed. Slope and the hazard of erosion are the main limitations. Using grasses and legumes in the crop rotation, stripcropping, and using cover crops and diversions help to control erosion. Crops and pastures on this soil respond well to lime and fertilizer.

Establishing and maintaining a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, and preventing overgrazing are major pasture management concerns. Clipping pastures annually helps to control woody vegetation. Smooth brome, fescue, redtop, and ladino clover are the suitable pasture species.

Although erosion is a hazard, the soil is suitable for woodland, and most areas are wooded. If logging roads are used, building them on the less sloping areas and using culverts and water bars help to reduce erosion. The common trees are northern hardwoods, eastern white pine, red spruce, and hemlock.

Some areas of this soil are used for community development. Slope and the high frost action potential are the main limitations for this use. Drainage helps to remove excess moisture in the substratum, thus reducing the frost action potential.

The capability subclass is IIIe.

**SaC2—Salmon very fine sandy loam, 8 to 15 percent slopes, eroded.** This soil is deep, well drained, and sloping. It is in valleys generally below an elevation of 800 feet. These areas are irregular in shape and range from 10 to 40 acres.

Typically this soil has a surface layer of light olive brown very fine sandy loam 7 inches thick. The subsoil is olive brown and olive very fine sandy loam 13 inches thick. The substratum is olive very fine sandy loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are areas of Boothbay, Scantic Variant, Potsdam, and Swanville soils and eroded Salmon soils. Also included are areas of soils with a surface layer and subsoil of loamy fine sand and fine sandy loam, areas that have in a few stones on the surface, and areas that have slopes of more than 15 percent or less than 8 percent. The Boothbay, Scantic Variant, Potsdam, Swanville, and eroded Salmon soils make up about 15 percent of this unit. Other soils make up about 10 percent.

The permeability of this Salmon soil is moderate. Available water capacity is high, and runoff is rapid. The soil is extremely acid to medium acid in unlimed areas. It has a high frost action potential.

This soil is suitable for farming, and most of the acreage is farmed. Slope and the hazard of erosion are the main limitations. Using grasses and legumes in the crop rotation, stripcropping, and using cover crops and diversions help to control erosion. Crops and pastures on this soil respond well to lime and fertilizer.

Establishing and maintaining a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, and preventing overgrazing are major pasture management concerns. Clipping pastures annually helps to control woody vegetation. Smooth brome, fescue, redtop, and ladino clover are the suitable pasture species.

Although erosion is a hazard, the soil is suited to woodland, and some areas are wooded. If logging roads are used, building them across the slope and using culverts and water bars help to reduce erosion. The common trees are northern hardwoods, eastern white pine, red spruce, and hemlock.

Some areas of this soil are used for community development. Slope and the high frost action potential are the main limitations for this use. Drainage helps to remove excess moisture in the substratum, thus reducing the frost action potential.

The capability subclass is IIIe.

**SaD—Salmon very fine sandy loam, 15 to 25 percent slopes.** This soil is deep, well drained, and moderately steep. It is in valleys generally above an elevation of 800 feet. The areas are irregular in shape and range from 10 to 40 acres.

Typically this soil has a surface layer of dark brown very fine sandy loam 3 inches thick. The subsoil is dark reddish brown and olive very fine sandy loam 19 inches thick. The substratum is olive very fine sandy loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are areas of Boothbay, Scantic Variant, and Potsdam soils and eroded Salmon soils. Also included are areas with a few stones on the surface and areas that have slopes of more than 25 percent or less than 15 percent. The Boothbay, Scantic Variant, Potsdam, and eroded Salmon soils make up about 15 percent of the unit. Other soils make up about 10 percent.

The permeability of this Salmon soil is moderate. Available water capacity is high, and runoff is rapid. The soil is extremely acid to medium acid in unlimed areas. It has a high frost action potential.

Slope and the hazard of erosion limit the use of tillage equipment and make this soil unsuitable for cultivated crops. However, the soil is suitable for hay and pasture. Establishing and maintaining a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, and preventing overgrazing are the major pasture management concerns. Pastures respond to the use of lime and fertilizer. Redtop, smooth brome, fescue, and ladino clover are the suitable pasture species.

Although erosion is a hazard, the soil is suitable for woodland, and most of the acreage is wooded. If logging roads are used, building them on the less sloping areas and using culverts and water bars help to reduce erosion. The common trees are northern hardwoods, eastern white pine, red spruce, and hemlock.

Some areas of this soil are used for community development. Slope and the frost action potential are the main limitations for this use.

The capability subclass is IVe.

**SaD2—Salmon very fine sandy loam, 15 to 25 percent slopes, eroded.** This soil is deep, well drained, and moderately steep. It is in valleys generally below an elevation of 800 feet. The areas are irregular in shape and range from 10 to 40 acres.

Typically this soil has a surface layer of light olive brown very fine sandy loam 5 inches thick. The subsoil is olive brown and olive very fine sandy loam 12 inches thick. The substratum is olive very fine sandy loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are areas of Boothbay, Scantic Variant, and Swanville soils and Salmon soils that are not eroded. Also included are areas of soils with a surface layer and subsoil of loamy fine sand, areas that have a few stones on the surface, and areas that have slopes of more than 25 percent or less than 15 percent. The Boothbay, Scantic Variant, Swanville, and uneroded Salmon soils make up about 15 percent of the unit. Other soils make up about 10 percent.

The permeability of this Salmon soil is moderate. Available water capacity is high, and runoff is rapid. The soil is extremely acid to medium acid in unlimed areas. It has a high frost action potential.

Slope and the hazard of erosion limit the use of tillage equipment and make this soil unsuitable for cultivated crops. The soil is suitable for hay and pasture, however, and most of the acreage is pastured. Establishing and maintaining a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, and preventing overgrazing are the major pasture management concerns. Pastures on this soil respond to the use of lime and fertilizer. Redtop, smooth

brome, fescue, and ladino clover are the suitable pasture species.

Although erosion is a hazard, the soil is suited to and used for woodland. If logging roads are used, building them on the less sloping areas and using culverts and water bars help to reduce erosion. The common trees are northern hardwoods, eastern white pine, red spruce, and hemlock.

Some areas of this soil are used for community development. Slope and the frost action potential are the main limitations for this use.

The capability subclass is IVe.

**SaE2—Salmon very fine sandy loam, 25 to 50 percent slopes, eroded.** This soil is deep, well drained, and steep. It is in valleys generally below an elevation of 800 feet. The areas are irregular in shape and range from 10 to 60 acres.

Typically this soil has a surface layer of light olive brown very fine sandy loam 4 inches thick. The subsoil is olive brown and olive very fine sandy loam 11 inches thick. The substratum is olive gray very fine sandy loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are areas of Boothbay and Scantic Variant soils and Salmon soils that are not eroded. Also included are areas of soils with a surface layer and subsoil of loamy fine sand, areas that have a few stones on the surface, and areas that have slopes of more than 50 percent or less than 25 percent. The Boothbay, Scantic Variant, and uneroded Salmon soils make up about 15 percent of the unit. Other soils make up about 10 percent.

The permeability of this Salmon soil is moderate. Available water capacity is high, and runoff is rapid. The soil is extremely acid to medium acid in unlimed areas. It has a high frost action potential.

Slope and the hazard of erosion make this soil unsuitable for farming.

The soil is suited to and used for woodland, but slope and the erosion hazard limit the use of equipment. If logging roads are used, building them across the slope and using culverts and water bars help to reduce erosion. The common trees are northern hardwoods, eastern white pine, red spruce, and hemlock.

Slope and the frost action potential are the main limitations of the soil for community development.

The capability subclass is VIe.

**SdC—Salmon Variant-Salmon very fine sandy loams, rocky, 8 to 15 percent slopes.** This complex consists of moderately deep and deep, well drained, sloping soils in the central and northern parts of the county. The areas are oval to irregular in shape and range from 5 to 50 acres. Areas of exposed bedrock cover less than 1 percent of the surface. The Salmon Variant and Salmon soils are so intermingled that it was not practical to map them separately. The complex is about 55 percent Salmon Variant soils, 25 percent Salmon soils, and 20 percent other soils.



Typically the Salmon Variant soil has a 3-inch-thick surface layer of dark reddish brown very fine sandy loam over a 1-inch-thick subsurface layer of gray very fine sandy loam. The subsoil is dark reddish brown and dark brown very fine sandy loam 18 inches thick. The substratum is olive very fine sandy loam 8 inches thick. Bedrock is at a depth of 30 inches.

Typically the Salmon soil has a 4-inch-thick surface layer of dark brown very fine sandy loam over a 3-inch-thick subsurface layer of light gray very fine sandy loam. The subsoil is dark reddish brown and olive very fine sandy loam 19 inches thick. The substratum is olive very fine sandy loam that extends to a depth of 60 inches or more.

Included with these soils in mapping are areas of Boothbay soils and eroded Salmon and Adams Variant soils. Also included are areas of soils that are less than 20 inches deep to bedrock and areas with a mottled subsoil.

The permeability of the Salmon and Salmon Variant soils is moderate to moderately rapid. Available water capacity is high in the Salmon soils and moderate in the Salmon Variant soils. Runoff is medium. Both soils are extremely acid to medium acid in unlimed areas. The Salmon soils have a high frost action potential.

Slope and the areas of exposed bedrock make these soils unsuitable for cultivated crops. The soils are suitable for pasture and hay, however, and much of the acreage is pastured. Establishing and maintaining a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, preventing overgrazing, and using pasture rotation are the major pasture management concerns. Pastures on these soils respond well to the use of lime and fertilizer. The suitable species are fescue, redtop, and ladino clover.

These soils are suitable for woodland, and much of the acreage is wooded. If logging roads are used, building them across the slope and using culverts and water bars help to control erosion. The common trees are northern hardwoods, eastern white pine, red spruce, and hemlock.

Slope, the areas of exposed bedrock, the depth to bedrock, and the frost action potential are the main limitations of this soil for community development.

The capability subclass is IVe for the Salmon Variant part; IIIe for the Salmon part.

**SdD—Salmon Variant-Salmon very fine sandy loams, rocky, 15 to 25 percent slopes.** This complex consists of moderately deep and deep, well drained, moderately steep soils in the central and northern parts of the county. The areas are oval to irregular in shape and range from 5 to 60 acres. Areas of exposed bedrock cover less than 1 percent of the surface. The Salmon Variant and Salmon soils are so intermingled that it was not practical to map them separately. The complex is about 50 percent Salmon Variant soils, 25 percent Salmon soils, and 25 percent other soils.

Typically the Salmon Variant soil has a 3-inch-thick surface layer of dark reddish brown very fine sandy loam over a 1-inch-thick subsurface layer of gray very fine sandy loam. The subsoil is dark reddish brown and dark brown very fine sandy loam 18 inches thick. The substratum is olive very fine sandy loam 6 inches thick. Bedrock is at a depth of 28 inches.

Typically the Salmon soil has a 3-inch-thick surface layer of dark brown very fine sandy loam over a 2-inch-thick subsurface layer of light gray very fine sandy loam. The subsoil is dark reddish brown and olive very fine sandy loam 17 inches thick. The substratum is olive very fine sandy loam that extends to a depth of 60 inches or more.

Included with these soils in mapping are areas of Boothbay soils and eroded Salmon and Adams Variant soils. Also included are areas of soils that are less than 20 inches deep to bedrock.

The permeability of the Salmon Variant and Salmon soils is moderate to moderately rapid. Available water capacity is high in the Salmon soils and moderate in the Salmon Variant soils. Runoff is medium. Both soils are extremely acid to medium acid in unlimed areas. The Salmon soils have a high frost action potential.

Slope and the areas of exposed bedrock make these soils unsuitable for cultivated crops. The soils are suitable for pasture and hay. Establishing and maintaining a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, preventing overgrazing, and using pasture rotation are the major pasture management concerns. Pastures on these soils respond well to the use of lime and fertilizer. The suitable species are fescue, redtop, smooth brome, and ladino clover.

These soils are suitable for woodland, and most of the acreage is wooded. If logging roads are used, building them across the slope and using culverts and water bars help to control erosion. The common trees are northern hardwoods, eastern white pine, red spruce, and hemlock.

Slope, the areas of exposed bedrock, the depth to bedrock, and the frost action potential are the main limitations of this soil for community development.

The capability subclass is VIe for the Salmon Variant part; IVe for the Salmon part.

**SdE—Salmon Variant-Salmon very fine sandy loams, rocky, 25 to 50 percent slopes.** This complex consists of moderately deep and deep, well drained, and steep soils in the central and northern parts of the county. The areas are oval to irregular in shape and range from 5 to 80 acres. Areas of exposed bedrock cover less than 1 percent of the surface. The Salmon Variant and Salmon soils are so intermingled that it was not practical to map them separately. The complex is about 50 percent Salmon Variant soils, 25 percent Salmon soils, and 25 percent other soils.

Typically the Salmon Variant soil has a 3-inch-thick surface layer of dark reddish brown very fine sandy loam

over a 1-inch-thick subsurface layer of gray very fine sandy loam. The subsoil is dark reddish brown and dark brown very fine sandy loam 16 inches thick. The substratum is olive very fine sandy loam 6 inches thick. Bedrock is at a depth of 26 inches.

Typically the Salmon soil has a 2-inch-thick surface layer of dark brown very fine sandy loam over a 2-inch-thick subsurface layer of light gray very fine sandy loam. The subsoil is dark reddish brown and olive very fine sandy loam 16 inches thick. The substratum is olive very fine sandy loam that extends to a depth of 60 inches or more.

Included with these soils in mapping are areas of Boothbay and eroded Salmon and Adams Variant soils. Also included are areas of soils that are less than 20 inches deep to bedrock.

The permeability of the Salmon Variant and Salmon soils is moderate to moderately rapid. Available water capacity is high, and runoff is rapid. The soils are extremely acid to medium acid in unlimed areas. The Salmon soils have a high frost action potential.

Slope, the hazard of erosion, and the areas of exposed bedrock make these soils generally unsuitable for farming.

The soils are suited for woodland. Most areas are wooded, but most are too steep for the safe operation of logging equipment, especially on slopes of more than 35 percent. The common trees are northern hardwoods, eastern white pine, red spruce, and hemlock.

Slope is the main limitation of these soils for community development.

The capability subclass is Vllc for the Salmon Variant part; Vle for the Salmon part.

**SeD—Scantic Variant bouldery silt loam, 8 to 25 percent slopes.** This soil is poorly drained and hilly. It is on plains in valleys. Boulders cover as much as 3 percent of the surface. The areas of the soil are irregular in shape and range from 5 to 50 acres.

Typically this soil has a surface layer of dark brown silt loam 9 inches thick. The subsoil is dark grayish brown silty clay 49 inches thick. The substratum is olive silty clay that extends to a depth of 64 inches or more.

Included with this soil in mapping are areas of soils that are silt loam throughout and areas that have slopes of more than 25 percent or less than 8 percent. Included soils make up about 15 percent of the unit.

The permeability of this Scantic Variant soil is moderately slow. Available water capacity is moderate, and runoff is rapid. The rooting depth is limited by a seasonal high water table that is at a depth of 6 to 24 inches during the spring and fall. The soil is strongly acid to neutral. It has a high frost action potential and a medium shrink-swell potential.

Slope, the high water table, an erosion hazard, and the boulders on the surface limit this soil for farming and restrict the use of farm equipment. The wetness makes the use of water-tolerant grasses necessary for hay.

The soil is suited to pasture, and most areas are pastured. Establishing and maintaining a mixture of grasses and legumes; using proper stocking rates to maintain desirable grasses and legumes; using pasture rotation; and preventing overgrazing, especially during wet periods in spring and fall, are the major pasture management concerns. Pastures on this soil respond to the use of lime and fertilizer. Reed canarygrass and reedtop are the suitable species for planting.

A few areas of this soil are used for woodland. If logging roads are used, building them across the slope helps to reduce erosion. Logging activities are limited to the driest periods of the year. Hemlock, white pine, balsam fir, and red spruce are the common trees.

Slope, the high water table, and the moderately slow permeability of the soil limit its use for community development, especially as a building site and as a site for septic systems. In addition, the frost action potential and shrink-swell potential are hazards to roads and foundations.

The capability subclass is Vle.

**SeE—Scantic Variant bouldery silt loam, 25 to 50 percent slopes.** This soil is poorly drained and steep. It is on plains in valleys. Boulders cover as much as 3 percent of the surface. The areas are irregular in shape and range from 10 to 100 acres.

Typically this soil has a surface layer of dark brown silt loam 9 inches thick. The subsoil is dark grayish brown silty clay 49 inches thick. The substratum is olive silty clay to a depth of 64 inches.

Included with this soil in mapping are areas of soils that are silt loam throughout and areas that have slopes of less than 25 percent or more than 50 percent. Included areas make up about 15 percent of the unit.

The permeability of this Scantic Variant soil is moderately slow. Available water capacity is moderate. Runoff is rapid. The rooting depth is limited by a seasonal high water table that is at a depth of 6 to 24 inches in the spring and fall. The soil is strongly acid to neutral. It has a high frost action potential and a medium shrink-swell potential.

Slope, the boulders on the surface, and the high water table make the soil unsuitable for cultivated crops and poorly suited to intensively managed pasture. Most areas are pastured. Establishing and maintaining a mixture of grasses and legumes; using proper stocking rates to maintain desirable grasses and legumes; using pasture rotation; and preventing overgrazing, especially during wet periods in spring and fall, are the major pasture management concerns.

Some areas of this soil are used for woodland. If logging roads are used, building them across the slope helps to reduce erosion. Logging activities are limited to the driest periods of the year. Hemlock, white pine, balsam fir, and red spruce are common trees.

Slope, the high water table, the moderately slow permeability, and the frost action and shrink-swell potentials limit this soil for community development.

The capability subclass is Vlle.

**Sr—Searsport muck.** This soil is deep, very poorly drained, and nearly level. It is in depressions on terraces and on deltas in valleys. The areas are circular to irregularly shaped and range from 5 to 15 acres.

The surface layer typically is black muck 14 inches thick. The substratum is a mottled, olive gray and gray coarse sand to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Peacham and Walpole soils and Borohemists. Also included are areas of gravelly soils, soils that have bedrock at a depth of less than 60 inches and areas that are flooded. The Walpole and Peacham soils and Borohemists make up about 15 percent of the unit. Other soils make up 20 percent.

The permeability of this Searsport soil is rapid. Available water capacity is low. The rooting depth is restricted by a high water table that is at the surface most of the year. Runoff is very slow, and water is ponded on the surface of some areas. This soil is very strongly acid to medium acid.

The high water table and organic matter content make this soil generally unsuitable for most uses other than low quality woodland. Balsam fir, red maple, alders, elm, and larch are the common tree species. Installing drainage in most areas of this soil is impractical.

The capability subclass is Vllw.

**StC—Stratton-Londonderry complex, 8 to 25 percent slopes.** This complex consists of shallow and very shallow, gently sloping to moderately steep, well drained soils on mountains generally between elevations of 1,500 and 3,000 feet. The areas are irregular in shape and range from 50 to 100 acres. The Stratton and Londonderry soils are so intermingled that it was not practical to map them separately. The complex is about 50 percent Stratton soils, 35 percent Londonderry soils, and 15 percent other soils.

The Stratton soil typically consists of dark reddish brown very flaggy silt loam and channery silt loam 15 inches thick. Bedrock is at a depth of 15 inches.

Typically the Londonderry soil has a fibrous organic mat 2 inches thick over a 6-inch-thick surface layer of grayish brown silt loam. Bedrock is at a depth of 8 inches.

Included with these soils in mapping are small areas of deeper soils and areas of Ricker soils. Also included are small areas of poorly drained soils and areas with slopes of more than 25 percent.

Permeability is moderately slow in the Londonderry soils and moderate to moderately rapid in the Stratton soils. Runoff is moderate, and available water capacity is very low in the Londonderry soils and high in the Stratton soils. The rooting depth is limited by the depth to bedrock. The soils are extremely acid to strongly acid.

Slope and the shallow depth to bedrock limit these soils for most uses other than low quality woodland.

These soils are too cold for crops and are readily erodible.

The capability subclass is IVe for the Stratton part; Vlle for the Londonderry part.

**SwA—Swanville silt loam, 0 to 6 percent slopes.**

This soil is gently sloping and poorly drained. It is generally in areas at an elevation of less than 800 feet. The areas are irregular in shape and range from 5 to 50 acres.

Typically this soil has a surface layer of dark grayish brown silt loam 6 inches thick. The subsoil is mottled, dark yellowish brown and grayish brown silt loam 27 inches thick. The substratum is mottled, dark gray silt loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Boothbay and Scantic Variant soils, soils that have an organic surface layer, and soils that have poorer drainage than this Swanville soil. Also included are areas of sandy soils, areas of exposed bedrock, areas of soils that have bedrock at a depth of 40 inches or less, and areas of sloping soils. The Boothbay and Scantic Variant soils make up 10 to 15 percent of this unit. Other soils make up 15 to 20 percent.

The permeability of the Swanville soil is moderately slow in the subsoil and substratum. Available water capacity is high, and runoff is slow. The rooting depth is restricted by a seasonal high water table at the surface from late fall to late spring. The soil is very strongly acid to neutral. It has a high frost action potential.

The seasonal high water table makes this soil better suited to hay or pasture than to crops. A few small drained areas are used for crops. Plant species are restricted to those that are water tolerant. Crops and pastures on this soil respond to lime and fertilizer.

Much of the acreage of this soil is pastured. Maintaining a mixture of grasses and legumes, using pasture rotation and restricting grazing during wet periods in the spring and fall are the major pasture management concerns. Tile drainage or open drains help to lower the seasonal water table.

Some areas are wooded, but the soil is poorly suited to woodland. The soil has a high rate of seedling mortality, and the water table limits the use of equipment and restricts rooting. Eastern white pine, spruce, and balsam fir are the common trees.

The seasonal high water table, the frost action potential, and a slow rate of percolation limit this soil for community development. The water table restricts the soil as a building site, and the moderately slow permeability is a limitation for septic systems. The frost action potential is a hazard to roads and foundations.

The capability subclass is IIIw.

**Te—Teel silt loam.** This soil is nearly level, deep, and moderately well drained. It is on flood plains along the major streams and rivers. The areas are irregular in shape and range from 5 to 30 acres. These areas are

subject to occasional flooding during heavy, brief rains and are subject to extended flooding from spring snowmelt and during intensive fall rains.

Typically the surface layer is dark brown silt loam 8 inches thick. The subsoil is very dark grayish brown silt loam 7 inches thick. The substratum is grayish brown and olive brown, mottled silt loam 28 inches thick. It is underlain by dark yellowish brown coarse sand that extends to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Limerick Variant soils and Histic Fluvaquents in depressions and Hamlin soils on knolls. These soils make up about 10 percent of the unit. Other soils make up about 20 percent.

The permeability of this Teel soil is moderate. Runoff is slow, and available water capacity is high. The rooting depth is restricted by a seasonal high water table at a depth of about 2 feet in spring and fall. The soil is medium acid to slightly acid in unlimed areas.

This soil is suited to and used for cultivated crops. The seasonal high water table and the hazard of flooding are the main limitations. The seasonal wetness impedes rooting and delays cultivation in the spring, and drainage is needed in some areas. Using grasses and legumes in the crop rotation helps to maintain tilth. Crops and pastures on this soil respond well to lime and fertilizer.

The soil is suited to hay and pasture, and many areas are used for hay. Providing drainage and using proper stocking rates and rotation grazing are the main pasture management concerns. The suitable plants are smooth brome, fescue, perennial ryegrass, and ladino clover.

The soil is well suited to woodland, but very few areas are wooded.

Flooding and the seasonal high water table limit the soil for community development.

The capability subclass is 1lw.

**TuB—Tunbridge-Lyman fine sandy loams, rocky, 3 to 8 percent slopes.** This complex consists of moderately deep and shallow, well drained and somewhat excessively drained, gently sloping soils on upland ridges and hills. The areas are irregular in shape and range from 10 to 60 acres. Areas of exposed bedrock cover less than 1 percent of the surface. The Tunbridge soils and Lyman soils are so intermingled that it was not practical to map them separately. The complex is about 50 percent Tunbridge soils, 30 percent Lyman soils, and 20 percent other soils.

Typically the Tunbridge soil has a surface layer of dark brown fine sandy loam 2 inches thick over a subsurface layer of grayish brown fine sandy loam 1 inch thick. The subsoil is dark reddish brown loam and yellowish brown silt loam 11 inches thick. The substratum is dark grayish brown gravelly fine sandy loam 14 inches thick. Bedrock is at a depth of 28 inches.

The Lyman soil typically has a surface layer of dark brown fine sandy loam 2 inches thick. The subsurface layer is light gray fine sandy loam 4 inches thick. The

subsoil is dark reddish brown and dark yellowish brown fine sandy loam 10 inches thick. Bedrock is at a depth of 16 inches.

Included with these soils in mapping are areas of Berkshire and Marlow soils and areas of Peru soils and poorly drained soils in depressions and drainageways. Also included are areas of soils that are less than 8 inches deep to bedrock and areas that have slopes of more than 8 percent.

The permeability of the Tunbridge and Lyman soils is moderate to moderately rapid. Available water capacity is moderate in the Tunbridge soils and very low in the Lyman soils. The rooting depth is limited by the depth to bedrock. The soils are extremely acid to medium acid in unlimed areas.

Little of the acreage of this unit is tilled. Slope, the areas of exposed bedrock, and the droughtiness and limited depth to bedrock make the soils better suited to hay and pasture than to cultivated crops. Many areas are pastured. Using grasses and legumes in the crop rotation helps to control erosion and maintain tilth. Crops and pastures on these soils respond to the use of lime and fertilizer.

The droughtiness of the Lyman soils and the hazard of erosion during pasture renovation are limitations for pasture management. Establishing and maintaining a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, and preventing overgrazing are the major pasture management concerns. The suitable pasture species are redbud, smooth brome, fescue, and ladino clover.

This complex is suited to and used for woodland. The low available water capacity in the Lyman soils and the restricted rooting depth are the main limitations. The use of water bars during logging helps to reduce erosion. Sugar maple, beech, birch, white pine, hemlock, and spruce are the common trees.

The areas of exposed bedrock and the limited depth to bedrock are the main limitations of the soils for community development, especially as a building site.

The capability subclass is 1le for the Tunbridge part; 1lle for the Lyman part.

**TuC—Tunbridge-Lyman fine sandy loams, rocky, 8 to 15 percent slopes.** This complex consists of moderately deep and shallow, well drained and somewhat excessively drained, sloping soils on upland ridges and hills. The areas are irregular in shape and range from 20 to 150 acres. Areas of exposed bedrock cover less than 1 percent of the surface. The Tunbridge soils and Lyman soils are so intermingled that it was not practical to map them separately. The complex is about 50 percent Tunbridge soils, 30 percent Lyman soils, and 20 percent other soils.

Typically the Tunbridge soil has a surface layer of dark brown fine sandy loam 2 inches thick over a subsurface layer of grayish brown fine sandy loam 1 inch thick. The subsoil is dark reddish brown loam and yellowish brown

silt loam 11 inches thick. The substratum is dark grayish brown gravelly fine sandy loam 14 inches thick. Bedrock is at a depth of 28 inches.

The Lyman soil typically has a surface layer of dark brown fine sandy loam 2 inches thick. The subsurface layer is light gray fine sandy loam 4 inches thick. The subsoil is dark reddish brown and dark yellowish brown fine sandy loam 10 inches thick. Bedrock is at a depth of 16 inches.

Included with these soils in mapping are areas of Marlow and Berkshire soils and areas of Peru soils and poorly drained soils in depressions and drainageways. Also included are areas of soils that are less than 8 inches deep to bedrock and areas that have slopes of more than 15 percent or less than 8 percent.

The permeability of these Tunbridge and Lyman soils is moderate to moderately rapid. Available water capacity is moderate in the Tunbridge soils and very low in the Lyman soils. The rooting depth is limited by the depth to bedrock. These soils are extremely acid to medium acid in unlimed areas.

Little of the acreage of this unit is tilled. Slope, the areas of exposed bedrock, and the droughtiness and limited depth to bedrock make the soils better suited to hay and pasture than to cultivated crops. Many areas are pastured. Using grasses and legumes in the crop rotation helps to control erosion and maintain tilth. Crops and pastures on these soils respond to the use of lime and fertilizer.

The droughtiness of the Lyman soils and the hazard of erosion during pasture renovation are limitations for pasture management. Establishing and maintaining a mixture of grasses and legumes, using proper stocking rates to maintain desirable grasses and legumes, and preventing overgrazing are the major pasture management concerns. The suitable pasture species are redtop, smooth brome, fescue, and ladino clover.

The complex is suitable for woodland, and a large acreage is wooded. The low available water capacity in the Lyman soils and the restricted rooting depth are the main limitations. The use of water bars during logging helps to reduce erosion. The common tree species on this complex are beech, birch, sugar maple, eastern white pine, spruce, and hemlock.

Slope, the limited depth to bedrock, and the areas of exposed bedrock limit these soils for community development, especially as a building site.

The capability subclass is IIle for the Tunbridge part; IVe for the Lyman part.

**TuD—Tunbridge-Lyman fine sandy loams, rocky, 15 to 25 percent slopes.** This complex consists of moderately deep and shallow, well drained and somewhat excessively drained, moderately steep soils on upland ridges and hills. These areas are irregular in shape and range from 20 to 250 acres. Areas of exposed bedrock cover less than 1 percent of the surface. The Tunbridge and Lyman soils are so

intermingled that it was not practical to map them separately. The complex is about 50 percent Tunbridge soils, 30 percent Lyman soils, and 20 percent other soils.

Typically the Tunbridge soil has a surface layer of dark brown fine sandy loam 1 inch thick over a subsurface layer of grayish brown fine sandy loam 1 inch thick. The subsoil is dark reddish brown loam and yellowish brown silt loam 10 inches thick. The substratum is dark grayish brown gravelly fine sandy loam 16 inches thick. Bedrock is at a depth of 28 inches.

The Lyman soil typically has a surface layer of dark brown fine sandy loam 2 inches thick. The subsurface layer is light gray fine sandy loam 2 inches thick. The subsoil is dark reddish brown and dark yellowish brown fine sandy loam 10 inches thick. Bedrock is at a depth of 14 inches.

Included with these soils in mapping are areas of Marlow and Berkshire soils and areas of Peru soils in drainageways. Also included are areas of soils that are less than 8 inches deep to bedrock and areas that have slopes of more than 25 percent or less than 15 percent.

The permeability of these Tunbridge and Lyman soils is moderate to moderately rapid. Available water capacity is moderate in the Tunbridge soils and very low in the Lyman soils. The rooting depth is limited by the depth to bedrock. These soils are extremely acid to medium acid in unlimed areas.

Slope makes these soils generally unsuitable for cultivated crops and poorly suited to hay or pasture. Some areas are pastured. Establishing and maintaining a mixture of grasses and legumes, preventing overgrazing, and using pasture rotation are the major pasture management concerns. Pastures on these soils respond to the use of lime and fertilizer.

This complex is suitable for woodland, and a large acreage is wooded. The low available water capacity in the Lyman soils, the restricted rooting depth, and the hazard of erosion are the main limitations. If logging roads are used, building them across the slope helps to control erosion. The common tree species on this complex are beech, birch, sugar maple, eastern white pine, hemlock, and red spruce.

Slope, the limited depth to bedrock, and the areas of exposed bedrock limit these soils for community development, especially as a building site.

The capability subclass is IVe for the Tunbridge part; VIe for the Lyman part.

**TuE—Tunbridge-Lyman fine sandy loams, rocky, 25 to 60 percent slopes.** This complex consists of moderately deep and shallow, well drained and somewhat excessively drained, steep soils on upland ridges and hills. The areas are irregular in shape and range from 20 to 250 acres. Areas of exposed bedrock cover less than 1 percent of the surface. The Tunbridge soils and Lyman soils are so intermingled that it was not practical to map them separately. The complex is about 40 percent Tunbridge soils, 40 percent Lyman soils, and 20 percent other soils.

Typically the Tunbridge soil has a surface layer of dark brown fine sandy loam 1 inch thick over a subsurface layer of grayish brown fine sandy loam 1 inch thick. The subsoil is dark reddish brown loam and yellowish brown silt loam 10 inches thick. The substratum is dark grayish brown gravelly fine sandy loam 13 inches thick. Bedrock is at a depth of 25 inches.

The Lyman soil typically has a surface layer of dark brown fine sandy loam 2 inches thick. The subsoil is dark reddish brown and dark yellowish brown fine sandy loam 12 inches thick. Bedrock is at a depth of 14 inches.

Included with these soils in mapping are areas of Marlow and Berkshire soils and areas of Peru soils in drainageways. Also included are areas of soils that are less than 8 inches deep to bedrock and areas that have slopes of more than 60 percent or less than 25 percent.

The permeability of these Tunbridge and Lyman soils is moderate to moderately rapid. Available water capacity

is moderate in the Tunbridge soils and very low in the Lyman soils. The rooting depth is limited by the depth to bedrock. These soils are extremely acid to medium acid in unlimed areas.

Slope, the depth to bedrock, and the areas of exposed bedrock make these soils generally unsuitable for most uses other than woodland. The use of woodland harvesting equipment is limited to areas that have slopes of less than 35 percent. The common tree species on these soils are beech, birch, sugar maple, eastern white pine, hemlock, and red spruce.

The capability subclass is VIIe.

**Ud—Udifluvents, frequently flooded.** These soils are moderately well drained to excessively drained. They are on flood plains and gravel bars near perennial streams and rivers and are subject to flooding during heavy rains (fig. 7). The areas are irregular in shape and



Figure 7.—This gravel bar consists of Udifluvents.

range from 2 to 10 acres. Slopes range from 0 to 3 percent.

Included with these soils in mapping are small areas of sandy soils and soils with seasonal high water table within 1 foot of the surface.

Permeability is rapid to very rapid in these soils. The surface layer is slightly acid to neutral. The substratum is strongly acid to neutral.

The hazard of flooding makes these soils unsuitable for most uses. Willow, alder, and water-tolerant grasses cover some areas.

This unit is not assigned to a capability subclass.

**WaA—Walpole fine sandy loam, 0 to 6 percent slopes.** This soil is deep, somewhat poorly drained to poorly drained, and nearly level to gently sloping. It is in drainageways and depressions in terraces in valleys. The areas are irregular in shape and range from 5 to 25 acres.

The surface layer typically is dark grayish brown fine sandy loam 4 inches thick. The subsoil is very dark grayish brown, mottled sandy loam 7 inches thick. The substratum is olive and olive gray gravelly coarse sand and coarse sand that extend to a depth of 60 inches or more.

Included with this soil in mapping are areas of Searsport and Swanville soils and Borohemists in depressions and areas of the Croghan soils on knolls. Some areas near streams are flooded, and some have a

silty substratum. The Searsport, Swanville, and Croghan soils and Borohemists make up about 20 percent of the unit. Other soils make up about 10 percent.

The permeability of this Walpole soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. Available water capacity is moderate. The rooting depth is limited by a seasonal high water table at the surface from early fall to late spring. Runoff is slow. The soil is very strongly acid to medium acid in unlimed areas. It has a high frost action potential.

The seasonal high water table makes this soil better suited to hay or pasture than to row crops. The water table also limits the use of this soil for pasture or hay, however, and plant species are restricted to those that are water tolerant. If suitable outlets are available, tile can be used to drain this soil. Crops and pastures on this soil respond well to lime and fertilizer.

Providing drainage, establishing water-tolerant grasses, and restricting grazing during wet periods in spring and fall are the major concerns of pasture management.

This soil is suitable for woodland, and most areas are wooded, but the seasonal high water table restricts rooting to the surface layer. White pine, balsam fir, and red spruce are the common trees.

The seasonal high water table limits this soil for community development. Outlets for drains are difficult to establish.

The capability subclass is IIIw.





## use and management of the soils

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This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help avoid soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavior characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreation facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

### crops and pasture

Silas Jewett, extension agent, Lamoille County, assisted with the preparation of this section.

General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils, including some not commonly grown in the survey area, are identified; the system of land capability classification used by the Soil Conservation Service is explained; and the estimated

yields of the main crops and hay and pasture plants are listed for each soil.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under "Detailed soil map units." Specific information can be obtained from the local office of the Soil Conservation Service or the Cooperative Extension Service.

*Soil erosion* is the major concern on about half of the cropland and pasture in Lamoille County. Erosion is a hazard on soils with slopes of more than 3 percent. Boothbay soils, for example, have slopes of 3 to 8 percent.

Loss of the surface layer through erosion causes a reduction in productivity as the surface layer is lost and part of the subsoil is incorporated into the plow layer. Loss of the surface layer is especially damaging on soils with a clayey subsoil, such as the Boothbay, Scantic Variant, and Swanville soils, and on soils with a firm layer in or below the subsoil or bedrock that limits the depth of the root zone. Marlow and Peru soils, for example, have a firm layer, and Lyman and Tunbridge soils have bedrock. Erosion also reduces productivity on soils that tend to be droughty, such as Adams, Duxbury, and Colton soils.

Soil erosion on farmland results in sedimentation of streams. Control of erosion minimizes the pollution by sedimentation and improves quality of water for municipal use, for recreation, and for fish and wildlife.

In many sloping fields, preparing a good seedbed and tilling are difficult on clayey spots because the original friable surface layer has been eroded. Such spots are common in areas of Boothbay soils.

According to the 1974 Census of Agriculture, more than 32,000 acres in the survey area was used for crops and pasture. Of this total, 13,000 acres was used for hay and 3,400 acres for row crops, mainly corn. The remainder was used for pasture or was idle. Acreage in crops and pasture has gradually been decreasing as more land is used for urban development.

Erosion control practices provide protective surface cover, reduce runoff, and increase infiltration. For example, a cropping system that keeps plant cover on the soil for extended periods can hold erosion losses to amounts that will not reduce the productive capacity of the soils. On dairy farms, which require pasture and hay, the legume and grass forage crops in the cropping system reduce erosion on sloping soils and provide nitrogen for the subsequent crops.

Slopes are so short and irregular in some areas of the sloping Lyman, Tunbridge, Berkshire, Boothbay, Salmon, and Adams soils that contour tillage or terracing is not practical. On these soils, cropping systems that provide a substantial plant cover are required to control erosion, or minimum tillage is practiced. Such practices leave sufficient plant cover on the surface and help to increase infiltration and reduce runoff. These practices can be used on most soils in the survey area.

Diversions reduce the length of slope and help to reduce runoff and erosion. They are most practical on deep soils that have regular slopes.

*Soil drainage* is the major management need on about one-quarter of the acreage used for crops and pasture in the survey area.

Unless artificially drained, the somewhat poorly drained and poorly drained soils are so wet that crop yields are reduced during most years. In this category are the Swanville, Peru, and Walpole soils.

The design of surface and subsurface drainage systems varies with the kind of soil. A combination of surface drainage and tile drainage is needed in most areas of the poorly drained and very poorly drained soils used for intensive row cropping. Drains have to be more closely spaced in soils with slow permeability than in the more permeable soils.

*Fertility* is naturally low in most soils on the uplands in the survey area. The soils on flood plains, such as the Ondawa, Podunk, and Hamlin soils, range from slightly acid to mildly alkaline and are naturally higher in plant nutrients than most upland soils.

Many upland soils are naturally very strongly acid and require applications of lime to increase suitability for alfalfa and other crops that require a nearly neutral pH level. Available phosphorus and potash levels are naturally low in most of these soils.

*Field crops* suited to the soils and climate of the survey area include many that are not commonly grown. Corn is the main crop. The soils in the survey area are also suitable for cabbage, potatoes, and similar cool-season crops.

*Special crops* grown commercially in the survey area include vegetables, Christmas trees, and nursery plants. A small acreage is used for potatoes, sweet corn, and tomatoes.

Deep soils that have good natural drainage and that warm up early in spring are especially well suited to many vegetables and small fruits. The Adams, Allagash, and Duxbury soils have good drainage and warm up early. Crops can generally be planted and harvested earlier on these soils than on the other soils in the survey area.

Most of the well drained soils in the survey area are suitable for nursery plants. Soils at low positions where frost is frequent and air drainage is poor, however, generally are poorly suited to early vegetables, small fruits, or orchards.

### yields per acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green-manure crops; and harvesting that insures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 5 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Soil Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils.

### land capability classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor does it consider possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for woodland, and for engineering purposes.

In the capability system, soils are generally grouped at three levels: capability class, subclass, and unit. Only class and subclass are used in this survey. These levels are defined in the following paragraphs.

*Capability classes*, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have slight limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class V soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

*Capability subclasses* are soil groups within one class. They are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, IIe. The letter *e* shows that the main limitation is risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class I there are no subclasses because the soils of this class have few limitations. Class V contains only the subclasses indicated by *w*, *s*, or *c* because the soils in class V are subject to little or no erosion. They have other limitations that restrict their use to pasture, woodland, wildlife habitat, or recreation.

The acreage of soils in each capability class and subclass is shown in table 6. The capability classification of each map unit is given in the section "Detailed soil map units."

## woodland management and productivity

David C. Stevens, Vermont Agency of Environmental Conservation, assisted with the preparation of this section.

The area of commercial forest in Lamoille County totals about 250,000 acres. This acreage is divided into two cover types, softwoods and hardwoods. The 1973 Forest Survey classified about 95,000 acres in Lamoille County as softwood cover and about 155,000 acres as hardwood cover. The softwood species in the county, which exist in mixed and pure stands, are white pine, hemlock, red spruce, tamarack, balsam fir, and northern white cedar. Most of the commercial forests classified as hardwoods consist of sugar maple, yellow birch, and

beech. Other less extensive tree species in the survey area are red maple, aspen, pin cherry, paper birch, gray birch, white ash, black ash, basswood, black cherry, and elm.

The 1973 Forest Survey reports a net volume of sawtimber in the county at 274 million board feet of softwood and 330 million board feet of hardwood. Utilization data compiled by the Vermont Department of Forests and Parks indicate that 10.2 million board feet of hardwood and 3.1 million board feet of softwood were milled in the county in 1975.

Table 7 can be used by woodland owners or forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed. The table lists the ordination (woodland suitability) symbol for each soil. Soils assigned the same ordination symbol require the same general management and have about the same potential productivity.

The first part of the *ordination symbol*, a number, indicates the potential productivity of the soils for important trees. The number 1 indicates very high productivity; 2, high; 3, moderately high; 4, moderate; and 5, low. The second part of the symbol, a letter, indicates the major kind of soil limitation. The letter *w* indicates excessive water in or on the soil; *d*, restricted root depth; *s*, sandy texture; and *r*, steep slopes. The letter *o* indicates that limitations or restrictions are insignificant. If a soil has more than one limitation, the priority is as follows: *w*, *d*, *s*, and *r*.

In table 7, *slight*, *moderate*, and *severe* indicate the degree of the major soil limitations to be considered in management.

Ratings of the *erosion hazard* indicate the risk of loss of soil in well managed woodland. The risk is *slight* if the expected soil loss is small, *moderate* if measures are needed to control erosion during logging and road construction, and *severe* if intensive management or special equipment and methods are needed to prevent excessive loss of soil.

Ratings of *equipment limitation* reflect the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. A rating of *slight* indicates that use of equipment is not limited to a particular kind of equipment or time of year; *moderate* indicates a short seasonal limitation or a need for some modification in management or in equipment; and *severe* indicates a seasonal limitation, a need for special equipment or management, or a hazard in the use of equipment.

*Seedling mortality* ratings indicate the degree to which the soil affects the mortality of tree seedlings. Plant competition is not considered in the ratings. The ratings apply to seedlings from good stock that are properly planted during a period of sufficient rainfall. A rating of *slight* indicates that the expected mortality is less than 25 percent; *moderate*, 25 to 50 percent; and *severe*, more than 50 percent.

Ratings of *windthrow hazard* are based on soil characteristics that affect the development of tree roots

and the ability of the soil to hold trees firmly. A rating of *slight* indicates that a few trees may be blown down by normal winds; *moderate*, that some trees will be blown down during periods of excessive soil wetness and strong winds; and *severe*, that many trees are blown down during periods of excessive soil wetness and moderate or strong winds.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a *site index*. This index is the average height, in feet, that dominant and codominant trees of a given species attain in 50 years. The site index applies to fully stocked, even-aged, unmanaged stands. Some of the commonly grown trees are those that woodland managers generally favor for wood crop production. They are the most important species in regard to growth rate, quality, value, and marketability. Other commonly grown tree species are listed, regardless of potential value or growth.

*Trees to plant* are those that are suited to the soils and to commercial wood production.

## recreation

Skiing and water-related activities provide most of the recreational opportunities in Lamoille County. The major downhill skiing trails in the county are at Stowe and Jeffersonville; cross-country trails are located throughout the county. Lake Eden, Lake Elmore, Wolcott Pond, and the Lamoille River and its tributaries provide areas for fishing and other water sports.

The soils of the survey area are rated in table 8 according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewerlines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreation use by the duration and intensity of flooding and the season when flooding occurs. In planning recreation facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 8, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures.

The information in table 8 can be supplemented by other information in this survey, for example,

interpretations for septic tank absorption fields in table 11 and interpretations for dwellings without basements and for local roads and streets in table 10.

*Camp areas* require site preparation such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have mild slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

*Picnic areas* are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or stones or boulders that increase the cost of shaping sites or of building access roads and parking areas.

*Playgrounds* require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a hardpan should be considered.

*Paths and trails* for hiking, horseback riding, and bicycling should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

*Golf fairways* are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

## wildlife habitat

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 9, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and

other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

*Grain and seed crops* are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

*Grasses and legumes* are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flood hazard, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are fescue, lovegrass, brome grass, clover, and alfalfa.

*Wild herbaceous plants* are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, wheatgrass, and grama.

*Hardwood trees* and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, the available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are Russian-olive, autumn-olive, and crabapple.

*Coniferous plants* furnish browse, seeds, and cones. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, cedar, and juniper.

*Wetland plants* are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, saltgrass, cordgrass, rushes, sedges, and reeds.

*Shallow water areas* have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

*Habitat for openland wildlife* consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. The wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, cottontail, and red fox.

*Habitat for woodland wildlife* consists of areas of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed grouse, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, deer, and bear.

*Habitat for wetland wildlife* consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, shore birds, muskrat, mink, and beaver.

## engineering

Richard A. Gallo, conservation engineer, Soil Conservation Service, assisted with this section.

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. The ratings are given in the following tables: Building site development, Sanitary facilities, Construction materials, and Water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil properties" section.

*Information in this section is intended for land use planning, for evaluating land use alternatives, and for*

*planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.*

*The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.*

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations need to be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to (1) evaluate the potential of areas for residential, commercial, industrial, and recreation uses; (2) make preliminary estimates of construction conditions; (3) evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; (4) evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; (5) plan detailed onsite investigations of soils and geology; (6) locate potential sources of gravel, sand, earthfill, and topsoil; (7) plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and (8) predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

### **building site development**

Table 10 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The

limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

*Shallow excavations* are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock, a cemented pan, or a very firm dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and the depth to the water table.

*Dwellings and small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrink-swell potential, and organic layers can cause the movement of footings. A high water table, depth to bedrock or to a cemented pan, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 to 6 feet are not considered.

*Local roads and streets* have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material, a base of gravel, crushed rock, or stabilized soil material, and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock or to a cemented pan, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, frost action potential, and depth to a high water table affect the traffic supporting capacity.

*Lawns and landscaping* require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, depth to bedrock or to a cemented pan, the available water capacity in the upper



40 inches, and the content of salts, sodium, and sulfidic materials affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

### sanitary facilities

Table 11 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Table 11 also shows the suitability of the soils for use as daily cover for landfills. A rating of *good* indicates that soil properties and site features are favorable for the use and good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

*Septic tank absorption fields* are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock or to a cemented pan, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to effectively filter the effluent. Many local ordinances require that this material be of a certain thickness.

*Sewage lagoons* are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of

compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

Table 11 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, depth to bedrock or to a cemented pan, flooding, large stones, and content of organic matter.

Excessive seepage due to rapid permeability of the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor.

*Sanitary landfills* are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground water pollution. Ease of excavation and revegetation needs to be considered.

The ratings in table 11 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock or to a cemented pan, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium affect trench type landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

*Daily cover for landfill* is the soil material that is used to cover compacted solid waste in an area type sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to soil blowing.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

### construction materials

Table 12 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good*, *fair*, or *poor* as a source of roadfill and topsoil. They are rated as a probable or improbable source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

*Roadfill* is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet, and the depth to the water table is less than 1 foot. They may have layers

of suitable material, but the material is less than 3 feet thick.

*Sand and gravel* are natural aggregates suitable for commercial use with a minimum of processing. Sand and gravel are used in many kinds of construction. Specifications for each use vary widely. In table 12, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

*Topsoil* is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, stones, or soluble salts, have slopes of more than 15 percent, or have a seasonal water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

## water management

Table 13 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect drainage, terraces and diversions, and grassed waterways.

*Pond reservoir areas* hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

*Embankments, dikes, and levees* are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium.

A high water table affects the amount of usable material. It also affects trafficability.

*Aquifer-fed excavated ponds* are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

*Drainage* is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and potential frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, or sulfur. Availability of drainage outlets is not considered in the ratings.

*Terraces and diversions* are embankments or a combination of channels and ridges constructed across a slope to reduce erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

*Grassed waterways* are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or to a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts or sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.



# soil properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classifications, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

## engineering index properties

Table 14 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

*Depth* to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under "Soil series and their morphology."

*Texture* is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If a soil contains particles coarser than sand, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

*Classification* of the soils is determined according to the Unified soil classification system (2) and the system

adopted by the American Association of State Highway and Transportation Officials (7).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as Pt. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

*Rock fragments* larger than 3 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

*Percentage (of soil particles) passing designated sieves* is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

*Liquid limit and plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are rounded to the nearest 5 percent.

Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

## physical and chemical properties

Table 15 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Clay* as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, and plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earth-moving operations.

*Moist bulk density* is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3 bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

*Permeability* refers to the ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems, septic tank absorption fields, and construction where the rate of water movement under saturated conditions affects behavior.

*Available water capacity* refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each major soil layer. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and

management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

*Soil reaction* is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

*Shrink-swell potential* is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The change is based on the soil fraction less than 2 millimeters in diameter. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, greater than 9 percent, is sometimes used.

*Erosion factor K* indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.05 to 0.69. The higher the value the more susceptible the soil is to sheet and rill erosion by water.

*Erosion factor T* is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

*Organic matter* is the plant and animal residue in the soil at various stages of decomposition.

In table 15, the estimated content of organic matter of the plow layer is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter of a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity,

infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

## soil and water features

Table 16 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

*Hydrologic soil groups* are used to estimate runoff from precipitation. Soils not protected by vegetation are assigned to one of four groups. They are grouped according to the intake of water when the soils are thoroughly wet and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

*Flooding*, the temporary inundation of an area, is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt and water in swamps and marshes are not considered flooding.

Table 16 gives the frequency and duration of flooding and the time of year when flooding is most likely.

Frequency, duration, and probable dates of occurrence are estimated. Frequency is expressed as none, rare, common, occasional, and frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions; *common* that it is likely under normal conditions; *occasional* that it occurs on an average of once or less in 2 years; and *frequent* that it occurs on an average of more than once in 2 years. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, and *long* if more than 7 days. Probable dates are expressed in months; November-May, for example, means that flooding can occur during the period November through May.

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and absence of distinctive horizons that form in soils that are not subject to flooding.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

*High water table* (seasonal) is the highest level of a saturated zone in the soil in most years. The depth to a seasonal high water table applies to undrained soils. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in table 16 are the depth to the seasonal high water table; the kind of water table—that is, perched, artesian, or apparent; and the months of the year that the water table commonly is high. A water table that is seasonally high for less than 1 month is not indicated in table 16.

An apparent water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. An artesian water table is under hydrostatic head, generally beneath an impermeable layer. When this layer is penetrated, the water level rises in an uncased borehole. A perched water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Only saturated zones within a depth of about 6 feet are indicated. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. The first numeral in the range indicates how high the water rises above the surface. The second numeral indicates the depth below the surface.

*Depth to bedrock* is given if bedrock is within a depth of 5 feet. The depth is based on many soil borings and on observations during soil mapping. The rock is specified as either soft or hard. If the rock is soft or fractured, excavations can be made with trenching machines, backhoes, or small rippers. If the rock is hard or massive, blasting or special equipment generally is needed for excavation.

*Potential frost action* is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is



not artificially drained. Silty and highly structured clayey soils that have a high water table in winter are most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage mainly to pavements and other rigid structures.

*Risk of corrosion* pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil.

Special site examination and design may be needed if the combination of factors creates a severe corrosion environment. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

# classification of the soils

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The system of soil classification used by the National Cooperative Soil Survey has six categories (4). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. In table 17, the soils of the survey area are classified according to the system. The categories are defined in the following paragraphs.

**ORDER.** Ten soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Spodosol.

**SUBORDER.** Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Orthod (*Orth*, meaning normal, plus *od*, from Spodosol).

**GREAT GROUP.** Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Haplorthod (*Hapl*, meaning minimal horizonation, plus *orthod*, the suborder of the Spodosols that have a udic moisture regime).

**SUBGROUP.** Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Haplorthod.

**FAMILY.** Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Mostly the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class,

mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is coarse-loamy, mixed, frigid Typic Haplorthod.

**SERIES.** The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can differ within a series.

## soil series and their morphology

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each series. The soil is compared with similar soils and with nearby soils of other series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the Soil Survey Manual (3). Many of the technical terms used in the descriptions are defined in Soil Taxonomy (4). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section "Detailed soil map units."

## Adams series

The Adams series consists of deep, well drained to excessively drained soils on terraces in valleys. The soils formed in deposits on outwash plains and beaches and deltas. Slopes range from 2 to 50 percent and are dominantly 2 to 15 percent.

The Adams soils are similar to Colton, Allagash, Duxbury, and Croghan soils. Adams soils have less gravel in the substratum than Colton or Duxbury soils. They have more sand in the solum than the Allagash soils. Adams soils are well drained, and the Croghan soils are moderately well drained.

Typical profile of Adams loamy fine sand, 8 to 15 percent slopes, in woodland, 3/4 mile southeast of the

junction of Vt. Route 109 and Plot Road, 50 feet southwest of Plot Road, town of Johnson:

- O1—1 inch to 0, softwood litter.
- A1—0 to 1 inch, black (5YR 2/1) loamy fine sand; moderate medium granular structure; very friable; many roots; very strongly acid; abrupt smooth boundary.
- A2—1 to 5 inches, pinkish gray (7.5YR 6/2) loamy fine sand; weak fine granular structure; very friable; few roots; very strongly acid; abrupt broken boundary.
- B21h—5 to 7 inches, dark reddish brown (5YR 3/3) loamy fine sand; weak fine subangular blocky structure; very friable; common roots; very strongly acid; clear wavy boundary.
- B22ir—7 to 13 inches, dark brown (7.5YR 4/4) loamy fine sand; weak fine granular structure; very friable; common roots; very strongly acid; gradual wavy boundary.
- B23—13 to 20 inches, yellowish brown (10YR 5/6) fine sand; weak fine granular structure; very friable; few roots; very strongly acid; gradual wavy boundary.
- B3—20 to 26 inches, light olive brown (2.5Y 5/6) fine sand; single grain; loose; few roots; very strongly acid; gradual wavy boundary.
- C—26 to 60 inches, olive yellow (2.5Y 6/6) fine and medium sand; single grain; loose; very few roots; very strongly acid.

The thickness of solum ranges from 16 to 30 inches. Reaction ranges from medium acid to very strongly acid. The depth to bedrock is more than 5 feet. Coarse fragments make up as much as 20 percent of the soil.

The A1 horizon has hue of 5YR or 7.5YR, value of 2 through 4, and chroma of 1 or 2. Some pedons have an Ap horizon. It has hue of 10YR, value of 3 or 4, and chroma of 2 or 3. It is loamy fine sand and is granular.

The A2 horizon has hue of 7.5YR or 10YR, value of 5 through 7, and chroma of 1 or 2. It is loamy fine sand or loamy sand. Tongues of the A2 and B21h horizons 1 to 4 feet apart extend into the B22ir horizon to a depth of 6 to 12 inches.

The B21h horizon has hue of 5YR through 10YR and value and chroma of 2 through 4. It is loamy fine sand or loamy sand. It is very friable, but in some pedons it is as much as 50 percent firm or very firm nodules of ortstein.

The lower part of the B horizon has hue of 7.5YR through 2.5Y, with 2.5Y hue restricted to the B3 horizon, and has value and chroma of 3 through 6. It is loamy fine sand to sand and is granular to single grain. It ranges from very friable to loose.

The C horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4 through 6. It is sand or coarse sand. In some pedons lenses of gravel are below a depth of 40 inches.

## Adams Variant

The Adams Variant consists of moderately deep, well drained to excessively drained soils on terraces in valleys. The soils formed on bedrock-controlled outwash plains. The soils are underlain by micaceous schist at a depth of 20 to 40 inches. Slopes range from 8 to 50 percent and are dominantly 8 to 15 percent.

The Adams Variant soils are similar to the Adams, Colton, Duxbury, and Tunbridge soils. The Adams Variant soils are not as deep as the Adams soils, have less gravel in the substratum than the Colton or Duxbury soils, and have more sand in the solum than the Tunbridge soils.

Typical profile of Adams Variant loamy fine sand, 8 to 15 percent slopes, in woodland, 1-1/2 miles west of Johnson Village, 1/4 mile north of Vt. Route 15, 200 feet south of the Lamoille River, town of Johnson:

- O1—2 inches to 1 inch, softwood litter.
- O2—1 inch to 0, black decomposed softwood litter.
- A2—0 to 3 inches, pinkish gray (7.5YR 6/2) loamy fine sand; weak fine granular structure; friable; many roots; strongly acid; abrupt broken boundary.
- B21h—3 to 6 inches, dark reddish brown (5YR 3/3) loamy fine sand; weak fine granular structure; friable; many roots; strongly acid; clear wavy boundary.
- B22ir—6 to 12 inches, dark brown (7.5YR 4/4) sand; single grain; loose; common roots; strongly acid; clear wavy boundary.
- B3—12 to 32 inches, dark yellowish brown (10YR 4/4) sand; single grain; loose; few roots; strongly acid; abrupt wavy boundary.
- R—32 inches, gray micaceous schist.

The thickness of solum and depth to bedrock range from 20 to 40 inches. The soil is loamy fine sand to sand. Reaction ranges from medium acid to very strongly acid. Coarse fragments make up less than 10 percent of the soil. Tongues of the A2 and B21h horizons extend into the B22ir horizon at intervals of 1 to 4 feet to a depth of 6 to 12 inches.

Some pedons have an Ap horizon. It has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 through 4. It is loamy fine sand.

The A2 has chroma of 0 through 2. It is loamy fine sand to sand.

The B horizon has hue of 5YR through 10YR, value of 3 through 5, and chroma of 3 through 6. It is loamy fine sand to sand.

## Allagash series

The Allagash series consists of deep, well drained soils formed in outwash deposits. The soils are on terraces and deltas in valleys.

The Allagash soils are similar to Salmon, Adams, Duxbury, and Colton soils. Allagash soils have more

sand in the substratum than the Salmon soils, have more silt in the solum than the Adams soils, and have less gravel in the substratum than the Duxbury or Colton soils.

Typical profile of Allagash very fine sandy loam, 2 to 8 percent slopes, in woodland, 1/2 mile east of Route 100, 1 mile north of North Hyde Park, town of Hyde Park:

- O1—1 inch to 0, hardwood leaf litter.
- A2—0 to 7 inches, light gray (5YR 6/1) very fine sandy loam; weak fine granular structure; very friable; few roots; very strongly acid; abrupt wavy boundary.
- B21h—7 to 9 inches, very dusky red (2.5YR 2/2) very fine sandy loam; weak medium subangular blocky structure; friable; many roots; very strongly acid; abrupt wavy boundary.
- B22hir—9 to 16 inches, dark reddish brown (5YR 3/4) fine sandy loam; weak medium subangular blocky structure; friable; common roots; very strongly acid; clear wavy boundary.
- B23—16 to 23 inches, dark yellowish brown (10YR 4/4) fine sandy loam; weak fine subangular blocky structure; very friable; common roots; strongly acid; clear wavy boundary.
- B3—23 to 32 inches, olive brown (2.5Y 4/4) fine sandy loam; weak fine granular structure; very friable; few roots; strongly acid; abrupt wavy boundary.
- IIC—32 to 60 inches, light olive brown (2.5Y 5/4) sand; single grain; loose; few roots; 5 percent coarse fragments; medium acid.

The thickness of solum ranges from 15 to 35 inches. The depth to bedrock is greater than 5 feet. The coarse fragment content is less than 10 percent in the solum and less than 15 percent to a depth of 40 inches. Below 40 inches, coarse fragments make up 0 to 35 percent of the soil. Reaction ranges from very strongly acid to medium acid in unlimed areas. The solum is fine sandy loam, very fine sandy loam, or silt loam. The IIC horizon is sand or gravelly sand.

Some pedons have an Ap horizon. It is very fine sandy loam and has hue of 10YR, value of 3 or 4, and chroma of 2 through 4. It has weak, medium granular structure.

The A2 horizon has hue of 5YR through 10YR, value of 6 or 7, and chroma of 1 or 2.

The upper part of the B horizon has hue of 2.5YR through 5YR, value of 2 through 4, and chroma of 2 through 5.

The lower part of the B horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 4 through 6.

The IIC horizon has hue of 2.5Y or 5Y, value of 5 or 6, and chroma of 4 through 6.

## Berkshire series

The Berkshire series consists of deep, well drained soils that formed in glacial till on the uplands. Slopes range from 3 to 50 percent and are dominantly 8 to 15 percent.

The Berkshire soils are similar to Colton, Adams, Duxbury, Tunbridge, and Marlow soils. Berkshire soils have less gravel in the substratum than the Colton or Duxbury soils and have less sand in the substratum than the Adams soils. Berkshire soils do not have the fragipan that is typical of the Marlow soils. Berkshire soils are deep, and the Tunbridge soils are moderately deep.

Typical profile of Berkshire very stony fine sandy loam, 3 to 8 percent slopes, in woodland, 1/2 mile north of the junction of West Hill Road and Percy Hill Road, in the town of Stowe:

- O1—8 to 5 inches, hardwood leaf litter.
- O2—5 inches to 0, very dusky red (2.5YR 2/2) decomposed organic material.
- A2—0 to 3 inches, pinkish gray (7.5YR 7/2) fine sandy loam; weak fine granular structure; very friable; many roots; extremely acid; abrupt irregular boundary.
- B21h—3 to 6 inches, very dusky red (2.5YR 2/2) loam; moderate medium subangular blocky structure; friable; common roots; extremely acid; abrupt irregular boundary.
- B22hir—6 to 9 inches, reddish brown (5YR 4/4) fine sandy loam; weak fine subangular blocky structure; friable; common roots; 10 percent coarse fragments; very strongly acid; clear irregular boundary.
- B23hir—9 to 16 inches, dark yellowish brown (10YR 4/4) fine sandy loam; weak medium to coarse subangular blocky structure; friable; common roots; 10 percent coarse fragments; very strongly acid; clear irregular boundary.
- B3—16 to 23 inches, olive (5Y 4/3) fine sandy loam; weak fine subangular blocky structure; friable; few roots; 10 percent coarse fragments; very strongly acid; clear irregular boundary.
- C1—23 to 48 inches, olive gray (5Y 4/2) fine sandy loam; weak thin and medium platy structure; friable to firm; few roots; 10 percent coarse fragments; very strongly acid; abrupt wavy boundary.
- IIC2—48 to 57 inches, dark grayish brown (2.5Y 4/2) gravelly loamy coarse sand; single grain; loose; few roots; 30 percent coarse fragments; strongly acid; abrupt wavy boundary.
- IIIC3—57 to 64 inches; dark grayish brown (2.5Y 4/2) fine sandy loam; weak thin and medium platy structure; friable; few roots; 10 percent coarse fragments; strongly acid; abrupt wavy boundary.
- IVC4—64 to 72 inches; light olive brown (2.5Y 5/4) cobbly medium sand; single grain; loose; few fine and medium roots; 30 percent cobbles; medium acid; abrupt wavy boundary.
- VC5—72 to 84 inches; olive gray (5Y 4/2) fine sandy loam; weak thin and medium platy structure; friable; 10 percent coarse fragments; medium acid.

The thickness of the solum ranges from 18 to 36 inches. The solum is silt loam, loam, or fine sandy loam.

The depth to bedrock is more than 5 feet. Rock fragments make up from 5 to 20 percent of the solum. Reaction ranges from medium acid to extremely acid throughout the profile in unlimed areas. In some areas in the C horizon is as much as 35 percent rock fragments.

The A1 and Ap horizons have hue of 10YR through 5YR and value and chroma of 2 through 4.

The A2 horizon has hue of 5YR through 10YR, value of 5 through 7, and chroma of 1 or 2.

The B21h horizon has hue of 2.5YR through 7.5YR and value and chroma of 2 through 4. It has weak or moderate, fine or medium granular or subangular blocky structure.

The B22hir horizon has hue of 5YR through 10YR and value and chroma of 3 or 4.

The lower part of the B horizon has hue of 10YR through 5Y, value of 3 through 5, and chroma of 3 or 4.

The C horizon has hue of 2.5Y or 5Y, value of 3 through 5, and chroma of 2 through 4. It is friable to firm. It is fine sandy loam or sandy loam or their gravelly analogues. Layers of loamy sand or sand are at a depth of more than 40 inches.

## Boothbay series

The Boothbay series consists of deep, moderately well drained soils that formed in lacustrine deposits generally at an elevation of less than 800 feet. Slopes range from 3 to 25 percent and are dominantly 8 to 25 percent.

The Boothbay soils are similar to Swanville, Scantic Variant, and Salmon soils. The Boothbay soils are not as wet as the Swanville soils and commonly are steeper. Boothbay soils have less clay than the Scantic Variant soils and are slightly wetter and have more clay than the Salmon soils.

Typical profile of Boothbay silt loam, 8 to 15 percent slopes, in hayland, 150 yards north of Vt. Route 100 and 200 yards north of the motor inn, town of Morristown:

- Ap—0 to 10 inches, dark grayish brown (10YR 4/2) silt loam; weak medium subangular blocky structure; friable; common roots; slightly acid; clear smooth boundary.
- B21—10 to 12 inches, olive (5Y 4/3) silt loam; weak medium subangular blocky structure; friable; common roots; medium acid; clear smooth boundary.
- B22—12 to 30 inches, olive (5Y 5/3) silt loam; olive gray (5Y 5/2), olive (5Y 5/3), and dark grayish brown (2.5Y 4/2) mottles; moderate medium subangular blocky structure; friable; few roots; medium acid; clear wavy boundary.
- C—30 to 60 inches, olive (5Y 4/4) silt loam; brown (10YR 4/3) and olive gray (5Y 4/2) mottles; moderate medium platy structure; friable; slightly acid.

The thickness of solum ranges from 20 to 30 inches. The depth to bedrock is more than 5 feet. Reaction ranges from slightly acid to neutral.

The Ap horizon has value of 3 or 4 and chroma of 2 or 3.

The B horizon has hue of 10YR through 5Y, value of 4 or 5, and chroma of 2 through 4; chroma of 2 occurs as an inherited color. The horizon silty clay loam or silt loam. Mottles in the B and C horizons have hue of 5Y through 7.5YR, value of 4 through 6, and chroma of 1 through 6.

The C horizon has hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 2 through 4. It is silt loam or silty clay loam. Thin lenses of fine sand or silt are in places.

## Borochemists

Borochemists consist of deep and moderately deep, very poorly drained, organic soils that have a loamy substratum. These soils formed in organic deposits in depressions and drainageways.

Borochemists are similar to Peacham, Searsport, and Walpole soils but have a thicker organic surface layer.

Because of the variability of Borochemists, a typical profile is not given. The soils consist of muck layers more than 16 inches thick. The depth to bedrock is more than 5 feet. The soils are extremely acid to medium acid.

The O horizon has hue of 2.5YR through 10YR and value and chroma of 1 through 4. It is hemic material with thin layers of sapric or fibric material.

The underlying mineral horizons have hue of 2.5Y or 5Y, value of 2 through 4, and chroma of 0 through 2. They are fine sandy loam or silt loam.

## Colton series

The Colton series consists of deep, excessively drained soils. Some are on outwash and deltaic plains at an elevation of about 800 feet. Some are on ice-contact features in the major river valleys at an elevation of about 1,200 feet.

The Colton soils are similar to Adams, Allagash, Duxbury, and Croghan soils. Colton soils have more sand in the solum than the Allagash or Duxbury soils. They have more gravel in the substratum than the Adams, Allagash, or Croghan soils.

Typical profile of Colton loamy sand, in an area of Colton-Duxbury complex, 15 to 25 percent slopes, in woodland, on the north face of a gravel pit on Ober Hill Road, 1/2 mile north of the junction of town road 18 and Ober Hill Road, town of Johnson:

- O2—4 inches to 0, black (10YR 2/1) decomposed organic material; granular structure; friable; many roots; abrupt smooth boundary.
- A2—0 to 3 inches, gray (7.5YR 6/1) loamy sand; weak fine granular structure; very friable; few roots; 10 percent coarse fragments; very strongly acid; abrupt wavy boundary.

- B21h—3 to 4 inches, very dusky red (2.5YR 2/2) fine sandy loam; weak fine subangular blocky structure; friable; many roots; 10 percent coarse fragments; very strongly acid; abrupt wavy boundary.
- B22hir—4 to 12 inches, dark red (2.5YR 3/6) loamy sand; weak medium granular structure; very friable; many roots; 10 percent coarse fragments; very strongly acid; clear wavy boundary.
- B23—12 to 18 inches, yellowish brown (10YR 5/8) gravelly loamy sand; massive; very friable; common roots; 20 percent coarse fragments; very strongly acid; clear wavy boundary.
- B3—18 to 27 inches, light olive brown (2.5Y 5/6) gravelly loamy sand; single grain; loose; few roots; 35 percent coarse fragments; very strongly acid; clear wavy boundary.
- C—27 to 60 inches, light yellowish brown (2.5Y 6/4) very gravelly sand; single grain; loose; 50 percent coarse fragments; very strongly acid.

The thickness of solum ranges from 18 to 36 inches. The depth to bedrock is more than 5 feet. Coarse fragments make up 10 to 55 percent of individual subhorizons but make up more than 35 percent of the control section. Reaction ranges from extremely acid to medium acid in unlimed areas.

Some pedons have an Ap horizon. It has hue of 10YR, value of 3 or 4, and chroma of 2 or 3. It is loamy sand or fine sandy loam and their gravelly analogs. It is granular and friable.

The A2 horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 1 or 2. It is loamy sand to fine sandy loam. Structure is granular, or the horizon is single grain.

The upper part of the B horizon has hue of 10YR through 2.5YR, value of 3 through 6, and chroma of 3 through 8. It is sand to loamy sand with gravelly analogs.

The lower part of the B horizon has hue of 10YR or 2.5Y, value of 5 through 6, and chroma of 4 through 8. It is sand to loamy sand and their gravelly or very gravelly analogs.

The C horizon has hue of 10YR through 5Y, value of 5 or 6, and chroma of 3 through 6. It is gravelly or very gravelly fine to coarse sand.

### Croghan series

The Croghan series consists of deep, moderately well drained soils on outwash terraces in valleys. Slopes range from 2 to 8 percent.

The Croghan soils are similar to Adams, Colton, and Duxbury soils. Croghan soils have mottles in the subsoil that are not typical in the Adams, Colton, or Duxbury soils. Croghan soils have less gravel in the substratum than the Colton or Duxbury soils.

Typical profile of Croghan loamy fine sand, 2 to 8 percent slopes, in a hayfield, 100 feet east of town road 33, 1/4 mile south of the junction of town road 33 and Vt. Route 108, town of Cambridge:

- Ap—0 to 8 inches, dark brown (7.5YR 3/2) loamy fine sand; weak fine subangular blocky structure; friable; many roots; 2 percent coarse fragments; slightly acid; abrupt smooth boundary.
- B21h—8 to 13 inches, dark yellowish brown (10YR 4/4) loamy sand; weak fine granular structure; friable; many roots; 2 percent coarse fragments; slightly acid; clear wavy boundary.
- B22ir—13 to 17 inches, light olive brown (2.5Y 5/4) sand; light gray (10YR 7/2) common medium distinct mottles and yellowish red (5YR 5/6) common medium prominent mottles; single grain; loose; common roots; 5 percent coarse fragments; slightly acid; clear wavy boundary.
- B3—17 to 28 inches, olive brown (2.5Y 4/3) loamy fine sand; common medium prominent yellowish red (5YR 5/6) mottles; massive; friable; few roots; 2 percent coarse fragments; medium acid; clear wavy boundary.
- C—28 to 45 inches, olive (5Y 5/3) sand; single grain; loose; 5 percent coarse fragments; medium acid; clear wavy boundary.
- C2—45 to 60 inches, olive (5Y 5/3) stratified loamy very fine sand; lenses of sand and very fine sandy loam; massive; friable; 2 percent coarse fragments; medium acid.

The thickness of solum ranges from 25 to 30 inches. The coarse-fragment content is less than 10 percent. The depth to bedrock is more than 5 feet. Reaction ranges from very strongly acid to medium acid.

The Ap horizon has hue of 7.5YR or 10YR and chroma of 2 or 3. Some pedons have an A2 horizon. It has hue of 7.5YR or 10YR, value of 6 or 7, and chroma of 0 through 2.

The upper part of the B horizon has hue of 2.5YR through 10YR and value and chroma of 2 through 4. It has granular structure or subangular blocky structure.

The lower part of the B horizon has hue of 10YR or 2.5Y, value of 3 through 5, and chroma of 3 or 4. It is loamy fine sand or sand. It has granular structure, or it is single grain or massive. Mottles are distinct or prominent.

The C horizon has hue of 2.5Y or 5Y, value of 4 or 5, chroma of 2 through 4. It is loamy fine sand through sand. At a depth of more than 40 inches, it is loamy very fine sand with lenses of sand and very fine sandy loam or it is sand.

### Duxbury series

The Duxbury series consists of deep well drained soils on terraces in valleys. The soils formed in glaciofluvial deposits. Slopes range from 2 to 50 percent and are dominantly 2 to 25 percent.

The Duxbury soils are similar to Allagash, Colton, Adams, Croghan, and Berkshire soils. Duxbury soils have more gravel in the substratum than the Allagash, Adams, Berkshire, or Croghan soils. Duxbury soils have more silt,

less gravel, and less sand in the solum than the Colton soils.

Typical profile of Duxbury fine sandy loam, in an area of Colton-Duxbury complex, 8 to 15 percent slopes, in woodland, on LeClair Road, 1/4 mile west of town road 7, town of Hyde Park:

- O1—2 inches to 1 inch, spruce needles.  
 O2—1 inch to 0, decomposed needles and twigs; moderate medium granular structure; friable; many roots; abrupt wavy boundary.  
 A2—0 to 5 inches, brown (7.5YR 5/2) fine sandy loam; weak very fine granular structure; very friable; many roots; 15 percent coarse fragments; extremely acid; abrupt irregular boundary.  
 B21h—5 to 8 inches, very dusky red (2.5YR 2/2) silt loam; weak medium subangular blocky structure; very friable; many roots; 10 percent coarse fragments; extremely acid; clear broken boundary.  
 B22hir—8 to 16 inches, dark reddish brown (5YR 3/4) fine sandy loam; weak medium subangular blocky structure; very friable; many roots; 15 percent coarse fragments; very strongly acid; gradual wavy boundary.  
 B23—16 to 25 inches, dark yellowish brown (10YR 3/4) gravelly fine sandy loam; massive; very friable; common roots; 20 percent coarse fragments; very strongly acid; abrupt irregular boundary.  
 IIC—25 to 60 inches, gray (5Y 5/1) and pale brown (10YR 6/3) gravelly sand; single grain; loose; 48 percent coarse fragments; strongly acid.

The thickness of the solum ranges from 16 to 30 inches and corresponds to the depth to contrasting material. Coarse fragments make up from 0 to 20 percent of the solum and 35 to 60 percent of the substratum. Reaction ranges from extremely acid to medium acid in unlimed areas.

The Ap horizon has hue of 7.5YR or 10YR and value and chroma of 2 or 3. Unplowed soils commonly have an O1, O2, A1, and A2 horizon. The A2 horizon has hue of 7.5YR through 10YR, value of 5 or 6, and chroma of 1 or 2. The A horizon has weak to moderate, fine to coarse granular structure.

The upper part of the B horizon has hue of 2.5YR through 7.5YR and value and chroma of 2 through 4. The upper part of the B2 horizon is often disturbed by plowing. Remnants of this horizon are in the form of cyclical tonguing. These tongues of B2h material are commonly 2 to 7 feet apart and extend to a depth of 10 to 24 inches. Structure is weak or moderate, fine or medium, granular or subangular blocky.

The lower part of the B horizon has hue of 5YR through 2.5Y and value and chroma of 3 through 5. It is fine sandy loam, sandy loam, or their gravelly analogs. Structure is weak, fine or medium subangular blocky or granular, or the horizon is massive.

The IIC horizon has hue of 10YR through 5Y, value of 4 through 6, and chroma of 1 through 4. It is gravelly or very gravelly medium or coarse sand.

## Fragiaquepts

Fragiaquepts are deep, somewhat poorly drained to very poorly drained soils in depressions and drainageways on uplands. The soils formed in sandy or loamy dense glacial till. They have a fragipan.

Fragiaquepts are similar to Peacham and Walpole soils and Haplaquepts. Fragiaquepts have a fragipan that is not typical of the Walpole soils or Haplaquepts. Fragiaquepts do not have the thick, dark organic surface layer that is typical of the Peacham soils.

Because of the variability of Fragiaquepts, a typical profile is not given. The soils have a mottled solum that is 12 to 36 inches thick. This is underlain by dense glacial till to a depth of 5 feet. Rock fragments make up 10 to 25 percent of the soil. Reaction ranges from very strongly acid to mildly alkaline.

The A and Ap horizons have hue of 10YR or 2.5Y, value of 2 through 4, and chroma of 1 or 2. They are silt loam or fine sandy loam.

The part of the B horizon above the Bx horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 1 through 4. At least one subhorizon at a depth of less than 20 inches has chroma of 2 or less. The horizon ranges from sand through silt loam and their gravelly analogs. Mottles are common, medium, and distinct. The horizon has granular through platy structure.

The Bx horizon has hue of 2.5Y or 5Y, value of 4 through 6, and chroma of 2 or less. It is silt loam, loam, or fine sandy loam. Mottles are common, medium or coarse, and distinct or prominent. Consistence is firm or very firm, and structure is platy through very coarse prismatic.

## Hamlin series

The Hamlin series consists of deep, well drained soils at the highest areas of recent flood plains along major streams and rivers. The soils formed in recent alluvium. These Hamlin soils are a taxadjunct because the soil temperature is lower than that defined in the range for the series and the solum is thinner. Slopes range from 0 to 3 percent.

The Hamlin soils are similar to Ondawa, Podunk, Teel, and Salmon soils. Hamlin soils do not have the mottles that are in the subsoil of the Teel soils. Hamlin soils have more silt in the substratum than the Ondawa or Podunk soils. Hamlin soils have a cambic B horizon, but the Salmon soils have a spodic B horizon.

Typical profile of Hamlin silt loam, in cropland, 1/4 mile west of Hyde Park, 300 yards south on Ten Bends Road, town of Hyde Park:

- Ap—0 to 7 inches, dark brown (10YR 3/3) very fine sandy loam; weak fine subangular blocky structure;



very friable; many roots; slightly acid; abrupt smooth boundary.

B2—7 to 16 inches, dark yellowish brown (10YR 3/4) very fine sandy loam; weak fine subangular blocky structure; very friable; common roots; slightly acid; gradual wavy boundary.

C—16 to 60 inches, dark brown (10YR 3/3) silt loam; massive; very friable; few roots; slightly acid.

The thickness of the solum ranges from 15 to 30 inches. The depth to bedrock is more than 5 feet. Reaction ranges from strongly acid to slightly acid in the upper part of the solum and medium acid to neutral in the lower part of the solum and in the substratum.

The Ap horizon has value of 3 or 4 and chroma of 2 or 3. It is very fine sandy loam or silt loam. It has weak or moderate, fine or medium, granular or subangular blocky structure.

The B horizon has value of 3 through 5 and chroma of 3 or 4. It is silt loam or very fine sandy loam. It has weak or moderate, fine or medium, granular or subangular blocky structure.

The C horizon has hue of 10YR or 2.5Y and value and chroma of 3 or 4. It mainly is silt loam to very fine sandy loam. Thin lenses of gravel or sand are in the C horizon in some pedons.

## Haplaquepts

Haplaquepts consist of deep, somewhat poorly drained to very poorly drained soils that formed in sandy or loamy glacial till or outwash. The areas are in depressions and drainageways on uplands.

Haplaquepts are similar to Peacham soils and Fragiaquepts. Haplaquepts do not have the fragipan typical of the Peacham soils and Fragiaquepts.

Because of the variability of Haplaquepts, a typical profile is not given. The soils have a mottled solum that is 12 to 36 inches thick. This is underlain by loamy glacial till or sandy material to a depth of 5 feet. Rock fragments make up 10 to 25 percent of the soil. Reaction ranges from very strongly acid to mildly alkaline.

The A and Ap horizons have hue of 10YR or 2.5Y, value of 2 through 4, and chroma of 1 or 2. They are silt loam, fine sandy loam, or loamy sand.

The B horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 1 through 4; at least one subhorizon at a depth of less than 20 inches has chroma of 2 or less. The horizon ranges from sand to silt loam and their gravelly analogs. Mottles are common, medium, and distinct. The horizon has granular through platy structure.

The C horizon has hue of 2.5Y or 5Y, value of 4 through 6, and chroma of 2 or less. The horizon is silt loam to sand with gravelly or cobbly analogs. Consistence is loose through firm, and the horizon is massive through platy. Mottles are common, medium or coarse, and distinct or prominent.

## Histic Fluvaquents

Histic Fluvaquents consist of deep, very poorly drained soils that formed in medium-textured recent alluvium. The soils are on the lowest parts of flood plains.

Histic Fluvaquents are similar to Rumney and Searsport soils. Histic Fluvaquents have a muck surface layer that the Rumney soils do not have. Histic Fluvaquents are flooded periodically; the Searsport soils are subject to ponding and have finer textured underlying layers.

Because of the variability of Histic Fluvaquents, a typical profile is not given. They have a muck surface layer that is 8 to 16 inches thick. The depth to bedrock is more than 5 feet. Coarse fragments make 0 to 20 percent of the soil. The soil is strongly acid to slightly acid in unlimed areas.

The O horizon has hue of 10YR or 2.5Y, value of 2 or 3, and chroma of 1 or 2.

The A horizon has hue of 10YR or 2.5Y, value of 2 through 4, and chroma of 1 or 2. It is silt loam to fine sandy loam.

The underlying horizons have hue of 2.5Y or 5Y, value of 3 or 4, and chroma of 0 through 2. They are silt loam to sandy loam. Layers of gravelly sand or silt are in some profiles.

## Limerick Variant

The Limerick Variant consists of poorly drained, deep soils that formed in recent alluvium. The soils are in depressional areas on flood plains. Slopes range from 0 to 3 percent.

Limerick Variant soils are similar to Hamlin, Teel, Podunk, Walpole, and Searsport soils and Histic Fluvaquents. Limerick Variant soils are the poorly drained member of a drainage sequence that includes well drained Hamlin soils and moderately well drained Teel soils. Limerick Variant soils do not have the muck surface layer that is in Histic Fluvaquents and Searsport soils. Limerick Variant soils have more silt in the substratum than the Podunk or Walpole soils.

Typical profile of Limerick Variant silt loam in hayland, 1/4 mile west of Hyde Park, 500 yards south on Ten Bends road, 200 yards east of the road, town of Hyde Park:

Ap—0 to 8 inches, dark brown (10YR 3/3) silt loam; weak fine granular structure; friable; many roots; slightly acid; abrupt smooth boundary.

C1g—8 to 32 inches, grayish brown (2.5Y 5/2) silt loam; few fine prominent yellowish brown (10YR 5/6) mottles and common fine distinct olive brown (2.5Y 4/4) mottles; massive; friable; few roots; slightly acid; abrupt smooth boundary.

C2—32 to 60 inches, olive brown (2.5Y 4/4) silt loam; common fine prominent yellowish brown (10YR 5/6) mottles; massive; friable; slightly acid.

The depth to bedrock is more than 5 feet. Reaction ranges from strongly acid to neutral throughout the profile.

The Ap horizon has hue of 10YR or 2.5Y and value and chroma of 3 or 4. It has weak or moderate, fine or medium, granular or subangular blocky structure. It is very fine sandy loam or silt loam.

The C horizon has hue of 2.5Y or 5Y, value of 3 through 5, and chroma of 2 through 4. Mottles are distinct or prominent. A subhorizon with chroma of 2 is at a depth of less than 20 inches. The C horizon is very fine sandy loam to silt loam above a depth of 40 inches and silt loam through coarse sand below a depth of 40 inches.

### Londonderry series

The Londonderry series consists of very shallow, well drained soils on the crests of hills and mountains. The soils formed in a thin layer of glacial till or residuum derived from micaceous schist. Slopes range from 8 to 60 percent but are dominantly 25 to 60 percent.

The Londonderry soils are similar to Ricker and Stratton soils. Londonderry soils do not have as thick a peat surface layer as the Ricker soils. Londonderry soils are shallower to bedrock than the Stratton soils, and they have less organic material in the mineral layer.

Typical profile of Londonderry silt loam, in an area of Londonderry-Stratton complex, 25 to 60 percent slopes, in woodland, 3/4 mile west of town road 24, 1/2 mile north of Hyde Park town line, town of Eden:

O1—2 inches to 1 inch, hardwood and softwood leaf and twig litter.

O2—1 inch to 0, black (10YR 2/1) decomposed organic material; moderate medium granular structure; very friable; many roots; very strongly acid; abrupt smooth boundary.

A2—0 to 6 inches, grayish brown (10YR 5/2) silt loam; weak fine subangular blocky structure; friable; few roots; strongly acid; 10 percent coarse fragments; abrupt wavy boundary.

R—6 inches, micaceous schist; high content of muscovite and sericite.

The thickness of solum and depth to bedrock are 7 inches or less. Reaction is extremely acid to strongly acid. Rock fragments make up 0 to 10 percent of the soil.

The A2 horizon has hue of 5YR through 10YR, value of 5 or 6, and chroma of 1 or 2. It is fine sandy loam or silt loam.

### Lyman series

The Lyman series consists of shallow soils that formed in glacial till on uplands. Slopes range from 3 to 60 percent but are dominantly 25 to 60 percent.

The Lyman soils are similar to Stratton, Londonderry, and Tunbridge soils. Lyman soils are the shallow member of a soil complex with moderately deep Tunbridge soils. Lyman soils have less organic matter in the subsoil than the Stratton soil and have a warmer soil temperature in summer than the Londonderry soils.

Typical profile of Lyman fine sandy loam, 3 to 8 percent slopes, in woodland, 100 feet north of UVM Research Forest on Town Hill, town of Wolcott:

O1—1 inch to 0, leaf litter.

A1—0 to 3 inches, dark brown (7.5YR 3/2) fine sandy loam; weak fine granular structure; very friable; many roots; 5 percent coarse fragments; very strongly acid; abrupt wavy boundary.

A2—3 to 7 inches, light gray (5YR 7/1) fine sandy loam; weak fine granular structure; very friable; common roots; 10 percent coarse fragments; very strongly acid; abrupt broken boundary.

B21h—7 to 9 inches, dark reddish brown (5YR 3/4) fine sandy loam; weak medium subangular blocky structure; friable; common roots; 7 percent coarse fragments; extremely acid; abrupt wavy boundary.

B22ir—9 to 12 inches, dark yellowish brown (10YR 3/4) fine sandy loam; weak fine subangular blocky structure; friable; few roots; 8 percent coarse fragments; extremely acid; clear wavy boundary.

B23ir—12 to 16 inches, dark yellowish brown (10YR 4/4) fine sandy loam; moderate medium subangular blocky structure; friable; few roots; 9 percent coarse fragments; very strongly acid; abrupt wavy boundary.

R—16 inches, micaceous schist.

The thickness of solum and depth to bedrock range from 8 to 20 inches. Reaction ranges from extremely acid to medium acid throughout the profile. Coarse fragments make up 5 to 20 percent of the soil.

The A1 or Ap horizon has hue of 7.5YR or 10YR, value of 2 or 3, and chroma of 0 through 2. Each is fine sandy loam or silt loam and has weak or moderate granular structure.

The A2 horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 1 or 2. It is fine sandy loam or silt loam and has fine or medium structure.

The B horizon has hue of 5YR through 10YR, value of 2 through 4, and chroma of 2 through 4. It has fine or medium granular or subangular blocky structure and is very friable or friable. It is fine sandy loam, loam, or silt loam in the upper part.

### Marlow series

The Marlow series consists of deep, well drained and moderately well drained soils that formed in compact glacial till.

The Marlow soils are similar to Berkshire, Potsdam, and Peru soils. Marlow soils have a fragipan that is not in the Berkshire soils and have more sand in the solum

than the Potsdam soils. Marlow soils are not mottled in the lower part of the spodic horizon, as are the Peru soils.

A typical profile of Marlow fine sandy loam, 8 to 15 percent slopes, in woodland, west side of old road, 1/4 mile north of Luce Hill Road, town of Stowe:

- A1—0 to 1 inch, black (5YR 2/1) fine sandy loam; weak very fine granular structure; very friable; many roots; less than 5 percent gravel; extremely acid; abrupt wavy boundary.
- B21hir—1 to 5 inches, dark reddish brown (5YR 3/3) fine sandy loam; weak medium subangular blocky structure parting to weak fine granular; very friable; many roots; 10 percent coarse fragments; very strongly acid; abrupt wavy boundary.
- B22hir—5 to 7 inches, dark brown (10YR 3/3) fine sandy loam; weak medium subangular blocky structure; very friable; common roots; 10 percent coarse fragments; very strongly acid; clear wavy boundary.
- B23hir—7 to 24 inches, olive brown (2.5Y 4/4) fine sandy loam; weak fine subangular blocky structure; friable; common roots; 15 percent coarse fragments; strongly acid; clear wavy boundary.
- B24—24 to 35 inches, olive (5Y 4/3) gravelly fine sandy loam; weak fine subangular blocky structure; friable; few roots; 20 percent coarse fragments; strongly acid; abrupt wavy boundary.
- Bx1—35 to 52 inches, very dark gray (2.5Y 3/1) gravelly fine sandy loam; red (2.5YR 4/6) and olive gray (5Y 5/2) mottles; weak medium platy structure; firm; olive (5Y 4/3) clay films; 20 percent coarse fragments; strongly acid; gradual wavy boundary.
- Bx2—52 to 74 inches, dark gray (5Y 4/1) gravelly fine sandy loam; weak medium platy structure; firm; olive (5Y 5/3) clay films; 30 percent coarse fragments; strongly acid; gradual wavy boundary.
- IIC—74 to 92 inches, olive gray (5Y 5/2) gravelly sandy loam; massive; firm; 35 percent coarse fragments; medium acid.

The depth to the fragipan ranges from 18 to 39 inches. The depth to bedrock is more than 5 feet. Reaction ranges from extremely acid to medium acid throughout the profile. Rock fragments make up 5 to 30 percent of the profile.

The A1 or Ap horizon has hue of 10YR through 5YR, value of 2 through 4, and chroma of 1 through 4. Each is fine sandy loam or silt loam.

The B21h horizon has hue of 5YR through 10YR, value of 2 through 5, and chroma of 2 through 4. It is fine sandy loam or silt loam.

The B22hir horizon has hue of 5YR through 10YR, value of 3 through 5, and chroma of 3 through 6. It is fine sandy loam or silt loam.

The lower part of the B horizon above the fragipan has hue of 10YR through 5Y, value of 3 through 5, and chroma of 3 through 6.

The Bx horizon has hue of 2.5Y or 5Y, value of 3 through 5, and chroma of 1 or 2. It has coarse or very coarse, prismatic, weak or moderate, medium or thick, platy structure or is massive.

The IIC horizon has hue of 2.5Y or 5Y, value of 3 through 5, and chroma of 1 or 2. It has very thick, platy structure or is massive, and consistence is firm to friable.

## Ondawa series

The Ondawa series consists of well drained soils on the highest terraces of recent flood plains along the major streams and rivers. The soils formed in recent alluvium. Slopes range from 0 to 3 percent.

The Ondawa soils are similar to Podunk, Hamlin, Teel, and Rumney soils. Ondawa soils are the well drained member of a drainage sequence that includes moderately well drained Podunk soils and poorly drained Rumney soils. Ondawa soils have more sand in the substratum than the Hamlin or Teel soils.

Typical profile of Ondawa fine sandy loam, in cropland, 3 miles west of Johnson Village, 400 feet north of Vt. Route 15, 100 feet southeast of the Lamoille River, town of Johnson:

- Ap—0 to 6 inches, dark yellowish brown (10YR 4/4) fine sandy loam; weak medium granular structure; very friable; many roots; slightly acid; abrupt smooth boundary.
- B2—6 to 40 inches, brown (10YR 4/3) fine sandy loam; weak medium granular structure; very friable; common roots; medium acid; abrupt smooth boundary.
- IIC—40 to 60 inches, dark yellowish brown (10YR 3/4) loamy sand; massive; very friable; few roots; strongly acid.

The thickness of solum ranges from 20 to 40 inches. The depth to bedrock is more than 5 feet. Reaction ranges from very strongly acid to slightly acid throughout the profile.

The Ap horizon has value of 3 through 5 and chroma of 3 or 4. It is fine sandy loam or sandy loam. It has weak or moderate, fine or medium, granular structure.

The B horizon has hue of 10YR or 2.5Y and value and chroma of 3 through 5. It is sandy loam or fine sandy loam. It has weak or moderate, fine or medium, granular or subangular blocky structure.

The IIC horizon has hue of 10YR or 2.5Y and value and chroma of 3 through 6. It is loamy sand or sand. Thin lenses of gravel or silt are in the C horizon of some pedons.

## Peacham series

The Peacham series consists of deep, very poorly drained soils that formed in dense glacial till derived from micaceous schist. The soils are in depressions and

drainageways on uplands. Slopes range from 0 to 5 percent but are generally less than 3 percent.

The Peacham soils are similar to Swanville, Searsport, and Walpole soils. The Peacham soils have a fragipan that is not in the Swanville, Searsport, or Walpole soils. Peacham soils have less sand in the substratum than the Searsport or Walpole soils.

Typical profile of Peacham muck in an area of Peacham stony muck, 0 to 5 percent slopes, in woodland, 50 feet northeast of the junction of town roads 7 and 18, 2 miles northwest of North Wolcott, town of Hyde Park:

O1—7 to 4 inches, leaf and needle litter and sphagnum moss.

O2—4 inches to 0, black (10YR 2/1) muck; friable; many fine roots; slightly acid; abrupt smooth boundary.

B2g—0 to 6 inches, greenish gray (5GY 5/1) silt loam; massive; firm; few roots; slightly acid; abrupt smooth boundary.

Cxg—6 to 60 inches, greenish gray (5GY 5/1) fine sandy loam; many medium prominent yellowish brown (10YR 5/6) mottles; very coarse strong prismatic structure parting to moderate medium platy; firm; no roots; 10 percent rock fragments; slightly acid.

The depth to the fragipan ranges from 6 to 16 inches. Reaction ranges from medium acid to neutral throughout the profile. Rock fragments make up 5 to 30 percent of the profile.

The Bg horizon has hue of 10YR through 5GY, value of 4 through 6, and chroma of 1 or 2. It is silt loam or fine sandy loam and their gravelly analogs. Structure is weak fine granular or massive. Consistence is friable or firm.

The Cxg horizon has hue of 2.5Y through 5GY, value of 3 through 5, chroma of 1 or 2. It has very coarse prismatic structure parting to thin to thick platy, or it is massive. Consistence is firm or very firm and brittle.

## Peru series

The Peru series consists of deep, moderately well drained to somewhat poorly drained soils on uplands. Slopes range from 3 to 25 percent but are dominantly 3 to 15 percent.

The Peru soils are similar to Marlow, Potsdam, and Berkshire soils. Peru soils have a mottled subsoil that is not in the Marlow, Potsdam, or Berkshire soils. Peru soils have more sand in the solum than the Potsdam soils, and have a fragipan that is not in the Berkshire soils.

Typical profile of Peru fine sandy loam, 8 to 15 percent slopes, 1/2 mile south of town road 73, 1 mile East of Vt. Route 100, town of Stowe:

Ap—0 to 8 inches, very dark grayish brown (10YR 3/2) fine sandy loam; moderate medium granular structure; friable; many roots; 5 percent coarse fragments; medium acid; clear wavy boundary.

B21h—8 to 10 inches, dark reddish brown (5YR 3/3) fine sandy loam; moderate medium granular structure; friable; many roots; 10 percent coarse fragments; strongly acid; clear wavy boundary.

B22ir—10 to 20 inches, dark brown (10YR 3/3) fine sandy loam; weak fine granular structure; friable; common roots; 10 percent coarse fragments; strongly acid; clear wavy boundary.

B23ir—20 to 26 inches, brown (10YR 4/3) fine sandy loam; yellowish red (5YR 5/8) and olive gray (5Y 5/2) common medium distinct mottles; weak fine granular structure; friable; few roots; 10 percent coarse fragments; strongly acid; clear wavy boundary.

B3—26 to 28 inches, olive brown (2.5Y 4/4) fine sandy loam; yellowish red (5YR 5/8) and olive gray (5Y 5/2) common medium distinct mottles; fine sandy loam; weak medium platy structure; friable; few roots; 10 percent coarse fragments; strongly acid; clear wavy boundary.

Cx—28 to 60 inches, very dark grayish brown (2.5Y 3/2) fine sandy loam; common medium prominent yellowish red (5YR 5/8) and olive gray (5Y 5/2) mottles; strong very coarse prismatic structure parting to strong medium platy; firm and brittle; 10 percent coarse fragments; strongly acid.

The thickness of solum and depth to the fragipan range from 15 to 36 inches. Rock fragments make up 5 to 30 percent of the profile. Reaction ranges from medium acid to extremely acid in unlimed areas.

The Ap or A1 horizon has value of 2 through 4 and chroma of 2 or 3. It is fine sandy loam or silt loam. The A2 horizon, where present, has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 1 or 2. It is fine sandy loam or silt loam.

The B21h horizon has hue of 5YR through 10YR and value and chroma of 2 through 4. It is silt loam or fine sandy loam with gravelly analogs.

The lower part of the B horizon has hue of 7.5YR through 2.5Y, value of 3 or 4, and chroma of 2 through 4.

An A'2 horizon is in some profiles.

The Cx horizon has hue of 2.5Y or 5Y, value of 3 or 4, and chroma of 2 or 3. It has coarse or very coarse prismatic structure parting to weak, medium or thick platy, or the horizon is massive. It is firm to very firm and brittle.

## Podunk series

The Podunk series consists of deep, moderately well drained soils. The soils formed in moderately coarse textured recent alluvium over coarse textured recent alluvium derived from micaceous schist.

The Podunk soils are similar to Ondawa, Rumney, Hamlin, Teel, and Limerick Variant soils. The Podunk soils are the moderately well drained member of a

drainage sequence that includes well drained Ondawa soils and poorly drained Rumney soils. The Podunk soils have more sand in the substratum than the Hamlin, Teel, or Limerick Variant soils. Podunk soils are not as well drained as the Hamlin soils and are not as wet as the Limerick Variant soils.

Typical profile of Podunk fine sandy loam, in cropland, 2 miles south of Morrisville, 300 yards east of Vt. Route 100, near Ryder Brook, town of Morristown:

- Ap—0 to 11 inches, dark brown (10YR 3/3) fine sandy loam; moderate fine granular structure; very friable; many roots; slightly acid; clear smooth boundary.
- B21—11 to 21 inches, olive brown (2.5Y 4/4) fine sandy loam; weak fine granular structure; very friable; common roots; slightly acid; clear smooth boundary.
- B22—21 to 32 inches, dark yellowish brown (10YR 4/4) fine sandy loam; olive gray (5Y 4/2), gray (5Y 5/1), and strong brown (7.5YR 5/6) common medium distinct mottles; weak fine granular structure; very friable; few roots; slightly acid; clear smooth boundary.
- IIC—32 to 57 inches, olive (5Y 4/3) loamy fine sand; gray (5Y 5/1) and strong brown (7.5YR 5/6) common medium distinct mottles; massive; very friable; few roots; slightly acid; abrupt smooth boundary.
- IIIC2—57 to 60 inches, olive (5Y 4/3) coarse sand; red (2.5YR 4/6) many coarse prominent mottles; single grain; loose; 10 percent coarse fragments; slightly acid.

The solum thickness ranges from 20 to 40 inches. Reaction ranges from very strongly acid to slightly acid in unlimed areas.

The A1 or Ap horizon has value of 3 or 4 and chroma of 2 or 3. Each has weak to moderate, fine to medium, granular structure.

The B horizon has hue of 10YR or 2.5Y, value of 3 through 5, and chroma of 3 or 4.

The C horizon has hue of 10YR through 5Y, value of 4 or 5, and chroma of 1 through 3. It is loamy fine sand to sand with thin strata of silt or gravel. It is massive or single grain.

## Potsdam series

The Potsdam series consists of deep, well drained and moderately well drained soils that formed in lacustrine-mantled glacial till on uplands. Slopes range from 3 to 25 percent but are dominantly 8 to 15 percent.

The Potsdam soils are similar to Marlow, Berkshire, Salmon, and Peru soils. The Potsdam soils have a fragipan that is not in the Berkshire or Salmon soils. Potsdam soils have a solum of gravel-free silt loam that is not in the Marlow or Peru soils.

Typical profile of Potsdam silt loam, 3 to 8 percent slopes, in woodland, 2.9 miles east of the junction of an unnamed road and Town Hill Road, town of Wolcott:

O1—1 inch to 0, slightly decomposed hardwood leaf litter.

A1—0 to 3 inches, black (5YR 2/1) silt loam; moderate medium and coarse granular structure; very friable; many roots; less than 5 percent coarse fragments; very strongly acid; abrupt wavy boundary.

A2—3 to 7 inches, gray (5YR 6/1) silt loam; weak medium platy structure; very friable; few roots; 10 percent coarse fragments; very strongly acid; abrupt wavy and broken boundary.

B21h—7 to 9 inches, dark reddish brown (5YR 2/2) silt loam; moderate medium subangular blocky structure; friable; many roots; 10 percent coarse fragments; very strongly acid; abrupt wavy and broken boundary.

B22ir—9 to 12 inches, dark brown (10YR 3/3) silt loam; weak medium subangular blocky structure; very friable; common roots; 10 percent coarse fragments; very strongly acid; clear wavy boundary.

B23ir—12 to 19 inches, yellowish brown (10YR 5/4) silt loam; weak fine subangular blocky structure; very friable; many roots; 10 percent coarse fragments; strongly acid; abrupt wavy boundary.

A'2—19 to 23 inches, light yellowish brown (2.5Y 6/4) silt loam; massive; friable; few roots; 10 percent coarse fragments; very strongly acid; abrupt irregular boundary.

IIB'x—23 to 48 inches, olive gray (5Y 4/2) fine sandy loam; strong brown (7.5YR 5/6) and gray (5Y 6/1) ped surfaces; few medium distinct gray (5Y 6/1) and strong brown (7.5YR 5/6) mottles; weak coarse prismatic structure parting to weak thick platy; firm and brittle; common thin clay films lining pores; common roots on prism faces; 10 percent coarse fragments; strongly acid; clear irregular boundary.

IIC—48 to 70 inches, grayish brown (2.5Y 5/2) fine sandy loam and sandy loam; thin strata of sand; few medium distinct gray (5Y 6/1) and dark yellowish brown (10YR 4/6) mottles; massive; friable; 10 percent coarse fragments increasing to 35 percent with depth; medium acid.

The thickness of the solum ranges from 40 to 60 inches. The depth to bedrock is more than 5 feet. Reaction ranges from medium acid to extremely acid throughout. The coarse-fragment content is less than 15 percent above the fragipan and 10 to 20 percent in the fragipan.

The A1 or Ap horizon has hue of 5YR through 10YR, value of 2 through 4, and chroma of 1 through 3. Structure is weak or moderate, fine to coarse granular. The horizon is very fine sandy loam or silt loam.

The A2 horizon has hue of 5YR through 10YR, chroma of 1 or 2, and value of 5 through 7. It is very fine sandy loam or silt loam.

The part of the B horizon above the fragipan has hue of 5YR through 10YR, value of 2 through 5, and chroma of 2 through 4. It is very fine sandy loam or silt loam.

An A' 2 horizon is in some pedons.

The fragipan has hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 2 through 4. Consistence is firm or very firm. The fragipan has coarse or very coarse prismatic structure parting to platy, or it is massive. It is fine sandy loam or gravelly fine sandy loam.

### Ricker series

The Ricker series consists of shallow, well drained, organic soils. The soils formed in organic material decomposed from moss and softwood litter. The areas are at the highest elevations of the Green Mountains. Slopes range from 15 to 80 percent.

Ricker soils are similar to the Londonderry and Stratton soils. Ricker soils have thicker organic layers than the Londonderry and Stratton soils.

Typical profile of Ricker peat, an area of Ricker peat, very rocky, 15 to 80 percent slopes, in woodland, 100 yards downslope on Butler Lodge Trail from TV access road, Mt. Mansfield, town of Stowe:

Oi—0 to 2 inches, dark reddish brown (2.5YR 2/4) peat (fibric material) broken, dark reddish brown (5YR 2/2) crushed and rubbed; 90 percent fiber, 75 percent rubbed; massive; loose; many roots; 5 percent twigs; extremely acid; clear wavy boundary.

Oe—2 to 4 inches, black (N 2/0) mucky peat (hemic material) broken, crushed, and rubbed; about 60 percent fiber, 20 percent rubbed; weak thin platy structure; friable; many roots; extremely acid; clear wavy boundary.

Oa—4 to 7 inches, black (N 2/0) muck (sapric material) broken, crushed, and rubbed; about 30 percent fiber, 15 percent rubbed; massive; friable; common roots; extremely acid; abrupt wavy boundary.

A2—7 to 9 inches, dark bluish gray (5B 4/1) very channery silt loam; massive; friable; common roots; 50 percent schist fragments; extremely acid; abrupt irregular boundary.

R—9 inches, weathered micaceous schist.

The organic horizons have neutral color or have hue of 2.5YR or 5YR, value of 2, and chroma of 0 through 2. They have platy structure, or they are massive.

The A2 horizon has hue of N 4/0 through 10B 4/1. It is fine sandy loam or silt loam with flaggy or very channery analogs.

Bedrock is at a depth of less than 20 inches. It is gray micaceous schist.

### Rumney series

The Rumney series consists of poorly drained, deep soils that formed in recent alluvium. The soils are in depressional areas on flood plains. Slopes range from 0 to 3 percent.

The Rumney soils are similar to the Ondawa, Podunk, Walpole, and Searsport soils. Rumney soils are the

poorly drained member of a drainage sequence that includes well drained Ondawa soils and moderately well drained Podunk soils. Rumney soils are flooded periodically, but the Walpole soils are not flooded. Rumney soils have more silt and clay in the solum than the Searsport soils.

Typical profile of Rumney fine sandy loam, 300 feet north of Vt. Route 15, 3.1 miles west of Johnson:

Ap—0 to 10 inches, very dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; friable; many roots; slightly acid; abrupt smooth boundary.

B21g—10 to 18 inches, dark grayish brown (2.5Y 4/2) fine sandy loam; common medium distinct yellowish brown (10YR 5/4) mottles; weak fine granular structure; friable; common roots; medium acid; gradual irregular boundary.

B22g—18 to 35 inches, very dark grayish brown (10YR 3/2) fine sandy loam; common medium distinct olive gray (5Y 4/2) mottles; weak fine granular structure; friable; few roots; strongly acid; abrupt wavy boundary.

IIC—35 to 60 inches, dark grayish brown (2.5Y 4/2) and olive brown (2.5Y 4/4) stratified loamy sand and loamy fine sand; single grain; loose; strongly acid.

The thickness of solum ranges from 20 to 40 inches. The depth to bedrock is more than 5 feet. Reaction ranges from very strongly acid to slightly acid throughout the profile.

The Ap horizon has hue of 10YR or 2.5Y and value of 3 or 4. Structure is weak or moderate, fine or medium granular.

The B horizon has hue of 10YR through 5Y and value of 3 through 5.

The IIC horizon has hue of 2.5Y or 5Y, value of 3 or 4, and chroma of 2 through 4. Thin strata of silt to gravelly sand are at a depth of more than 40 inches. The horizon is loamy fine sand to coarse sand.

### Salmon series

The Salmon series consists of deep, well drained soils that formed in lacustrine sediments. Slopes range from 3 to 50 percent but are dominantly 8 to 15 percent.

The Salmon soils are similar to Boothbay and Allagash soils. The Salmon soils have less clay than and are not as wet as the Boothbay soils. They have more silt in the substratum than the Allagash soils.

Typical profile of Salmon very fine sandy loam, 3 to 8 percent slopes, in woodland, 1/2 mile south of Vt. Route 15, on Elmore Road, town of Wolcott:

A1—0 to 4 inches, dark brown (7.5YR 3/2) very fine sandy loam; weak fine granular structure; friable; many roots; very strongly acid; abrupt smooth boundary.



A2—4 to 7 inches, light gray (7.5YR 7/1) very fine sandy loam; weak fine granular structure; friable; few roots; very strongly acid; abrupt wavy boundary.

B21h—7 to 8 inches, dark reddish brown (5YR 3/3) very fine sandy loam; weak medium subangular blocky structure; friable; many roots; strongly acid; abrupt wavy boundary.

B22ir—8 to 13 inches, dark brown (7.5YR 4/4) very fine sandy loam; weak medium subangular blocky structure; friable; common roots; strongly acid; clear wavy boundary.

B23—13 to 20 inches, olive brown (2.5Y 4/4) very fine sandy loam; weak medium subangular blocky structure; friable; few roots; medium acid; clear wavy boundary.

B3—20 to 26 inches, olive (5Y 5/4) very fine sandy loam; massive; friable; few roots; medium acid; clear wavy boundary.

C—26 to 60 inches, olive (5Y 4/3) very fine sandy loam; massive; friable; few roots; medium acid.

The solum thickness ranges from 20 to 30 inches. The depth to bedrock is more than 5 feet. Reaction ranges from very strongly acid to medium acid throughout the profile. The coarse-fragment content ranges from 0 to 5 percent.

The A1 or Ap horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 through 4. Each is very fine sandy loam or silt loam.

The A2 horizon has hue of 5YR through 7.5YR, value of 6 or 7, and chroma of 0 through 2. It is very fine sandy loam or silt loam.

The upper part of the B horizon has hue of 5YR or 7.5YR, value of 3 or 4, and chroma of 2 through 4.

The lower part of the B horizon has hue of 10YR through 5Y, value of 4 or 5, and chroma of 3 or 4. It is very fine sandy loam or silt loam.

The C horizon has value of 4 or 5 and chroma of 3 or 4. It is very fine sandy loam or silt loam. The lower part of the C horizon exhibits varving.

## Salmon Variant

The Salmon Variant consists of moderately deep, well drained soils that formed in lacustrine sediments. Slopes range from 8 to 50 percent but are dominantly 15 to 25 percent.

The Salmon Variant soils are similar to Salmon, Lyman, Boothbay, and Allagash soils. The Salmon Variant soils are shallower than the Salmon soils, which have bedrock at a depth of 60 inches or more, and are deeper than the Lyman soils, which have bedrock at a depth of less than 20 inches. Salmon Variant soils have less gravel in the substratum than the Allagash soils and are not as deep. Salmon Variant soils do not have the mottles in the subsoil of the Boothbay soils and have less clay.

Typical profile of Salmon Variant very fine sandy loam, in an area of Salmon Variant-Salmon very fine sandy

loams, rocky, 8 to 15 percent slopes, in woodland, 3/8 mile northwest of town road 4, 1 mile south of Vt. Route 15, town of Wolcott:

O2—1 inch to 0, black decomposed leaf litter.

A1—0 to 3 inches, dark reddish brown (5YR 2/2) very fine sandy loam; weak very fine granular structure; very friable; many roots; very strongly acid; abrupt irregular boundary.

A2—3 to 4 inches, gray (10YR 6/1) very fine sandy loam; weak fine subangular blocky structure; friable; common roots; very strongly acid; abrupt broken boundary.

B21h—4 to 5 inches, dark reddish brown (5YR 3/2) very fine sandy loam; weak fine subangular blocky structure; friable; common roots; very strongly acid; abrupt wavy boundary.

B22ir—5 to 8 inches, dark reddish brown (5YR 3/3) very fine sandy loam; weak fine subangular blocky structure; friable; common roots; very strongly acid; abrupt wavy boundary.

B3—8 to 22 inches, dark brown (10YR 3/3) very fine sandy loam; weak fine subangular blocky structure; friable; few roots; strongly acid; clear wavy boundary.

C—22 to 30 inches, olive (5Y 5/3) very fine sandy loam; massive; friable; few roots; strongly acid; 5 percent coarse fragments; abrupt wavy boundary.

R—30 inches, micaceous schist.

The solum thickness ranges from 20 to 30 inches. The depth to bedrock is 20 to 40 inches. Reaction ranges from very strongly acid to medium acid throughout the profile. The coarse-fragment content ranges from 0 to 5 percent.

The A1 or Ap horizon has hue of 5YR through 10YR, value of 2 through 4, and chroma of 2 through 4. Each is very fine sandy loam or silt loam.

The A2 horizon has hue of 7.5YR or 10YR, value of 6 or 7, and chroma of 0 through 2. It is very fine sandy loam or silt loam.

The upper part of the B horizon has hue of 5YR or 7.5YR, value of 3 or 4, and chroma of 2 through 4. The lower part of the B horizon has hue of 10YR through 5Y, value of 4 or 5, and chroma of 3 or 4. The B horizon is very fine sandy loam or silt loam.

The C horizon has value of 4 or 5 and chroma of 3 or 4. It is very fine sandy loam or silt loam. The lower part of the C horizon in some profiles exhibits varving.

## Scantic Variant

The Scantic Variant consists of deep, poorly drained soils on strongly dissected lacustrine terraces in valleys. Slopes range from 8 to 50 percent but are dominantly 30 to 45 percent.

The Scantic Variant soils are similar to Boothbay and Swanville soils but contain more clay.



Typical profile of Scantic Variant silt loam, in an area of Scantic Variant bouldery silt loam, 25 to 50 percent slopes, in pasture, 1/2 mile south of Tenney Bridge, 100 yards south of dirt road, town of Morristown:

- Ap—0 to 9 inches, dark brown (10YR 4/3) silt loam; moderate fine and medium granular structure; friable; many roots; strongly acid; abrupt smooth boundary.
- B1—9 to 13 inches, dark grayish brown (2.5Y 4/2) silty clay; moderate fine and medium subangular blocky structure; friable; common roots; strongly acid; clear wavy boundary.
- B21—13 to 15 inches, dark grayish brown (2.5Y 4/2) silty clay; strong medium angular blocky structure; friable; few roots; olive gray (5Y 5/2) ped surfaces; slightly acid; clay films on ped faces; clear wavy boundary.
- B22—15 to 28 inches, dark grayish brown (2.5Y 4/2) silty clay; strong medium and coarse angular blocky structure; sticky and plastic; thin clay film on ped faces; few roots; dark gray (5Y 4/1) ped surfaces; slightly acid; clear wavy boundary.
- B31—28 to 37 inches, very dark grayish brown (2.5Y 3/2) silty clay; strong coarse angular blocky structure; sticky and plastic; few roots; gray (5Y 5/1) ped surfaces; thin clay films on ped faces; slightly acid; clear wavy boundary.
- B32—37 to 58 inches, dark grayish brown (2.5Y 4/2) silty clay; strong very coarse prismatic structure parting to strong coarse angular blocky; sticky and plastic; few roots; slightly acid; clear wavy boundary.
- C—58 to 64 inches, olive (5Y 4/3) silty clay; massive; sticky and plastic; neutral.

The thickness of solum ranges from 20 to 60 inches. The depth to bedrock is more than 5 feet. Reaction ranges from strongly acid to slightly acid in the solum and is neutral in the substratum.

The Ap horizon has hue of 10YR to 2.5Y and value and chroma of 3 or 4.

The upper part of the B horizon has hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 1 or 2.

The lower part of the B horizon has hue of 2.5Y or 5Y, value of 3 through 5, and chroma of 1 or 2.

The C horizon has hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 1 through 3. The C horizon is varved or stratified.

### Searsport series

The Searsport series consists of deep, very poorly drained soils that formed on depressions in outwash plains. Slopes range from 0 to 3 percent.

The Searsport soils are similar to Borochemists and Walpole soils. Searsport soils do not have muck substratum that is typical of the Borochemists. Searsport soils have a muck surface layer and are wetter than the Walpole soils.

Typical profile of Searsport muck, 100 yards north of Vt. Route 14, 2 miles east of the village of Morrisville:

- O2—14 inches to 0, black (5Y 2/1) muck; moderate medium granular structure; friable; many roots; very strongly acid; abrupt smooth boundary.
- C1g—0 to 35 inches, olive gray (5Y 5/2) coarse sand; common medium prominent gray (N 6/0) and strong brown (7.5YR 5/6) mottles; single grain; loose; few roots; very strongly acid; clear smooth boundary.
- C2g—35 to 60 inches, gray (5Y 5/1) coarse sand; single grain; loose; very strongly acid.

The O horizon has hue of 10YR through 5Y; value of 2, and chroma of 0 through 2.

The C horizon has hue of 2.5Y or 5Y, value of 5 or 6, and chroma of 1 or 2. It is loamy sand to coarse sand. The average coarse-fragments content is less than 10 percent. Thin, gravelly strata are in some profiles.

### Stratton series

The Stratton series consists of shallow, well drained soils on mountains. The soils formed in a thin layer of glacial till or residuum derived from micaceous schist. Slopes range from 8 to 60 percent but are dominantly 25 to 60 percent.

The Stratton soils are similar to Lyman, Londonderry, and Ricker soils. The Stratton soils have more organic matter in the subsoil and a lower temperature than the Lyman soils. Stratton soils have a subsoil that is not in the Londonderry or Ricker soils and do not have the peat and muck layers that are in the Ricker soils.

Typical profile of Stratton very flaggy silt loam, in an area of Londonderry-Stratton complex, 25 to 60 percent slopes, in woodland, 3.4 miles west on the toll road from the base of Mt. Mansfield, 100 feet west of curve, town of Stowe:

- O1—5 to 3 inches, partly decomposed leaves and needles.
- O2—3 inches to 0, decomposed leaves and needles.
- B21h—0 to 2 inches, dark reddish brown (5YR 2/2) very flaggy silt loam; moderate coarse subangular blocky structure parting to weak fine subangular blocky; friable, strongly smeary; extremely acid; many roots; 70 percent rock fragments; abrupt wavy boundary.
- B22h—2 to 4 inches, dark reddish brown (5YR 3/2) very flaggy silt loam; moderate coarse subangular blocky structure parting to weak fine subangular blocky; friable, strongly smeary; extremely acid; 70 percent rock fragments; clear wavy boundary.
- B23ir—4 to 15 inches, reddish brown (5YR 4/4) channery silt loam; moderate medium subangular blocky structure; friable, strongly smeary; extremely acid; common roots; 35 percent rock fragments; abrupt irregular boundary.
- R—15 inches, slightly weathered micaceous schist.

The thickness of solum and depth to bedrock are 8 to 20 inches. Rock fragments make up 35 to 70 percent of the soil. Reaction is extremely acid or very strongly acid.

Some pedons have an A2 horizon with hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 0 through 2. It is fine sandy loam through silt loam with gravelly, channery, or flaggy analogs.

The upper part of the B horizon has hue of 2.5YR through 5YR, value of 2 or 3, and chroma of 0 through 3. The lower part of the B horizon has hue of 2.5YR through 7.5YR, value of 2 through 4, and chroma of 0 through 4. It is fine sandy loam through silt loam with gravelly, channery, flaggy, or very flaggy analogs.

### Swanville series

The Swanville series consists of deep, poorly drained soils on lacustrine plains generally below an elevation of 800 feet. The soils formed in lacustrine sediments. Slopes range from 0 to 6 percent.

The Swanville soils are similar to Boothbay and Scantic Variant soils. The Swanville soils are wet for longer period than the Boothbay soils and have less clay than the Scantic Variant soils.

Typical profile of Swanville silt loam, 0 to 6 percent slopes, in pasture, 0.9 mile east of town road 34, 300 yards south of town road 36, town of Hyde Park:

- Ap—0 to 6 inches, dark grayish brown (10YR 4/2) silt loam; moderate fine granular structure; friable; many roots; medium acid; abrupt smooth boundary.
- A2g—6 to 10 inches, grayish brown (2.5Y 5/2) silt loam; moderate medium granular structure; friable; few roots; strongly acid; abrupt smooth boundary.
- B21—10 to 17 inches, dark yellowish brown (10YR 3/4) silt loam; many medium prominent dark gray (N 4/0) mottles; moderate fine granular structure; friable; many roots; very strongly acid; clear smooth boundary.
- B22g—17 to 33 inches grayish brown (2.5Y 5/2) silt loam; common medium distinct dark yellowish brown (10YR 4/4) mottles; weak thin platy structure; friable; common roots; medium acid; clear smooth boundary.
- Cg9—33 to 60 inches, dark gray (5Y 4/1) silt loam; many coarse distinct dark yellowish brown (10YR 4/4) and olive brown (2.5Y 4/4) mottles; massive; friable; slightly acid.

The thickness of solum ranges from 18 to 40 inches. The depth to bedrock is more than 5 feet. Coarse fragments make up from 0 to 2 percent of the profile. Reaction is very strongly acid to neutral throughout.

The Ap horizon has value of 3 or 4 and chroma of 2 or 3.

The B horizon has hue of 10YR through 5Y, value of 3 through 6, and chroma of 2 through 4. It is silt loam or silty clay loam.

The C horizon has hue of 2.5Y or 5Y, value of 4 through 6, and chroma of 1 or 2. It is silt loam or silty clay loam. It has thin, contrasting lenses of silt or sand in some pedons.

### Teel series

The Teel series consists of deep, moderately well drained soils that formed in recent alluvium derived from micaceous schist. Slopes range from 0 to 3 percent. The Teel soils in this survey area are a taxadjunct; they have a lower soil temperature and a thinner solum than is defined in the range for the series, and the lower part of the C horizon is coarser textured.

The Teel soils are similar to Ondawa, Podunk, Hamlin, and Limerick Variant soils. Teel soils are the moderately well drained member of a drainage sequence that includes well drained Hamlin soils and poorly drained Limerick Variant soils. Teel soils have less sand in the solum than the Ondawa or Podunk soils.

Typical profile of Teel silt loam, in hayland, 0.1 mile west of Hyde Park town line, 1/8 mile south of Vt. Route 100, town of Johnson:

- Ap—0 to 8 inches, dark brown (10YR 3/3) silt loam; weak fine granular structure; very friable; many roots; slightly acid; abrupt smooth boundary.
- B2—8 to 15 inches, very dark grayish brown (10YR 3/2) silt loam; weak fine subangular blocky structure; very friable; common roots; slightly acid; abrupt smooth boundary.
- C1—15 to 23 inches, grayish brown (10YR 5/2) silt loam; common fine faint yellowish brown (10YR 5/6) mottles; massive; very friable; few roots; slightly acid; abrupt smooth boundary.
- C2—23 to 43 inches, olive brown (2.5Y 4/4) silt loam; common medium prominent olive gray (5Y 5/2) mottles; massive; very friable; few roots; slightly acid; abrupt wavy boundary.
- IIC3—43 to 60 inches, dark yellowish brown (10YR 4/6) coarse sand; single grain; loose; slightly acid.

The solum thickness ranges from 15 to 30 inches. Reaction ranges from medium acid to mildly alkaline in unlimed areas.

The A1 or Ap horizon has value of 3 or 4 and chroma of 2 or 3. Each is silt loam or very fine sandy loam and has weak to moderate, fine to medium granular structure.

The B horizon has hue of 10YR or 2.5Y, value of 3 through 5, and chroma of 2 through 4. It is silt loam or very fine sandy loam. Low-chroma matrix colors are inherited.

The C horizon has hue of 10YR or 2.5Y, value of 3 through 5, and chroma of 2 through 4. It is silt loam or very fine sandy loam.

The IIC horizon has hue of 10YR through 2.5Y, value of 4 or 5, and chroma of 1 through 6. The horizon is fine

sandy loam to sand with thin strata of silt or gravel. It is massive or single grain.

### Tunbridge series

The Tunbridge series consists of well drained, moderately deep soils that formed in glacial till derived from micaceous schist. The soils are on hills and ridges on uplands. Slopes range from 3 to 60 percent but are dominantly 8 to 25 percent.

The Tunbridge soils are similar to Lyman and Berkshire soils and are mapped with these soils. The Tunbridge soils are deeper than the Lyman soils and not as deep as the Berkshire soils.

Typical profile of Tunbridge fine sandy loam, in an area of Tunbridge-Lyman fine sandy loams, rocky, 3 to 8 percent slopes, in woodland, 3/4 mile north of the junction of Percy Road and Weeks Hill Road, town of Stowe:

- A1—0 to 2 inches, dark brown (7.5YR 3/2) fine sandy loam; weak fine granular structure; very friable; many roots; 5 percent coarse fragments; extremely acid; abrupt wavy boundary.
- A2—2 to 3 inches, grayish brown (10YR 5/2) fine sandy loam; weak fine granular structure; friable; many roots; 5 percent coarse fragments; very strongly acid; abrupt broken boundary.
- B21h—3 to 9 inches, dark reddish brown (5YR 3/4) loam; moderate medium angular blocky structure; friable; many roots; 12 percent coarse fragments; very strongly acid; clear wavy boundary.
- B22ir—9 to 14 inches, yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; friable; many roots; 10 percent coarse fragments; very strongly acid; clear wavy boundary.
- C—14 to 28 inches, dark grayish brown (2.5Y 4/2); gravelly fine sandy loam; weak medium subangular blocky structure; friable; common roots; 15 percent coarse fragments; medium acid; abrupt irregular boundary.
- R—28 inches, mica schist.

The thickness of solum ranges from 14 to 25 inches. The depth to bedrock ranges from 20 to 40 inches. Rock fragments make up 5 to 20 percent of the profile. Reaction ranges from extremely acid to medium acid throughout the profile in unlimed areas.

The A1 or Ap horizon has hue of 7.5YR or 10YR and value and chroma of 2 through 4. Each has weak to moderate, fine to medium granular structure.

The A2 horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 1 or 2.

The upper part of the B horizon has hue of 2.5YR through 7.5YR and value and chroma of 3 or 4. It is silt loam, loam, or fine sandy loam. It has weak to moderate, fine to medium granular, angular or subangular blocky structure and is very friable or friable.

The lower part of the B horizon has hue of 7.5YR through 10YR, value of 3 through 5, and chroma of 3 through 6. It has weak to moderate, fine to medium, granular or subangular blocky structure and is friable. It is loam, silt loam, or fine sandy loam.

The C horizon has hue of 2.5Y, value of 4 through 6, and chroma of 2 through 6. Consistence is very friable to friable.

### Udfluvents

Udfluvents consist of deep, moderately well drained to excessively drained soils that formed in gravelly, coarse textured recent alluvium. Slopes range from 0 to 3 percent.

Because of the variability of these soils a typical profile is not given. They have a solum that is 3 to 6 inches thick. This is underlain by coarse textured, stratified material to a depth of 60 inches. Coarse fragments make up 15 to 60 percent of the soil. Reaction ranges from strongly acid to neutral.

The A horizon has hue of 10YR through 5Y, value of 3 or 4, and chroma of 2 or 3. It is fine sandy loam to sand and gravelly analogs.

The underlying material has hue of 2.5Y or 5Y, value of 3 through 5, and chroma of 2 through 4. It is mainly gravelly sand but ranges from loamy very fine sand to very gravelly coarse sand. It is mottled in some areas.

### Walpole series

The Walpole series consists of deep, poorly drained soils in depressions and on outwash terraces. Slopes range from 0 to 6 percent. The Walpole soils in this survey area are a taxadjunct; they have a lower soil temperature and a thinner solum than is defined in the range for the series.

The Walpole soils are similar to Searsport, Swanville, and Rumney soils. The Walpole soils do not have the thick organic surface layer and gray colors that are in the Searsport soils. Walpole soils have less silt and clay than the Swanville soils and are underlain by sand. Walpole soils contain less silt than the Rumney soils.

Typical profile of Walpole fine sandy loam, 0 to 6 percent slopes, in woodland, 300 yards north of Vt. Route 15, 2 miles east of Morrisville, town of Morristown:

- O2—2 inches to 0, muck.
- A1—0 to 4 inches, dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; very friable; many roots; very strongly acid; abrupt smooth boundary.
- B2g—4 to 11 inches, very dark grayish brown (2.5Y 3/2) sandy loam; common coarse distinct strong brown (7.5YR 5/6) and gray (5Y 5/1) mottles; weak fine granular structure; very friable; common roots; very strongly acid; abrupt smooth boundary.
- IIC1—11 to 34 inches, olive (5Y 4/3) gravelly coarse sand; single grain; loose; 20 percent coarse

fragments; very strongly acid; clear smooth boundary.

IIIC2—34 to 60 inches, olive gray (5Y 4/2) coarse sand; single grain; loose; very strongly acid.

The thickness of solum ranges from 10 to 15 inches. The depth to bedrock is more than 5 feet. The gravel content mainly ranges from 0 to 25 percent; thin strata in the C horizon are up to 50 percent gravel. The soil

ranges from very strongly acid to medium acid throughout the profile.

The A1 or Ap horizon has value of 2 or 3 and chroma of 1 or 2.

The B2 horizon has hue of 10YR or 2.5Y, value of 3 through 6, and chroma of 2 or 3.

The C horizon has value of 4 through 6 and chroma of 2 or 3.



## references

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- (1) American Association of State Highway and Transportation Officials. 1970. Standard specifications for highway materials and methods of sampling and testing. Ed. 10, 2 vol., illus.
- (2) American Society for Testing and Materials. 1974. Method for classification of soils for engineering purposes. ASTM Stand. D 2487-69. *In* 1974 Annual Book of ASTM Standards, Part 19, 464 pp., illus.
- (3) United States Department of Agriculture. 1951. Soil survey manual. U.S. Dep. Agric. Handb. 18, 503 pp., illus. [Supplements replacing pp. 173-188 issued May 1962]
- (4) United States Department of Agriculture. 1975. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. Soil Conserv. Serv., U.S. Dep. Agric. Handb. 436, 754 pp., illus.





# glossary

**Ablation till.** Loose, permeable till deposited during the final downwasting of glacial ice. Lenses of crudely sorted sand and gravel are common.

**Alluvium.** Material, such as sand, silt, or clay, deposited on land by streams.

**Area reclaim** (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

**Available water capacity (available moisture capacity).** The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as—

	<i>Inches</i>
Very low.....	0 to 3
Low.....	3 to 6
Moderate.....	6 to 9
High.....	9 to 12
Very high.....	More than 12

**Basal till.** Compact glacial till deposited beneath the ice.

**Base saturation.** The degree to which material having cation exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the total cation exchange capacity.

**Bedding planes.** Fine stratifications, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediments.

**Bedrock.** The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

**Bottom land.** The normal flood plain of a stream, subject to flooding.

**Boulders.** Rock fragments larger than 2 feet (60 centimeters) in diameter.

**Cation-exchange capacity.** The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity, but is more precise in meaning.

**Channery soil.** A soil that is, by volume, more than 15 percent thin, flat fragments of sandstone, shale,

slate, limestone, or schist as much as 6 inches along the longest axis. A single piece is called a fragment.

**Clay.** As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

**Clay film.** A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

**Coarse fragments.** If round, mineral or rock particles 2 millimeters to 25 centimeters (10 inches) in diameter; if flat, mineral or rock particles (flagstone) 15.2 to 38.1 centimeters (6 to 15 inches) long.

**Coarse textured soil.** Sand or loamy sand.

**Cobblestone (or cobble).** A rounded or partly rounded fragment of rock 3 to 10 inches (7.5 to 25 centimeters) in diameter.

**Complex slope.** Irregular or variable slope. Planning or constructing terraces, diversions, and other water-control measures on a complex slope is difficult.

**Complex, soil.** A map unit of two or more kinds of soil in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils are somewhat similar in all areas.

**Consistence, soil.** The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—  
*Loose.*—Noncoherent when dry or moist; does not hold together in a mass.

*Friable.*—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

*Firm.*—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

*Plastic.*—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

*Sticky.*—When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

*Hard.*—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

*Soft.*—When dry, breaks into powder or individual grains under very slight pressure.

*Cemented.*—Hard; little affected by moistening.

**Contour stripcropping.** Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

**Control section.** The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

**Corrosive.** High risk of corrosion to uncoated steel or deterioration of concrete.

**Cover crop.** A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

**Cutbanks cave** (in tables). The walls of excavations tend to cave in or slough.

**Deferred grazing.** Postponing grazing or arresting grazing for a prescribed period.

**Depth to rock** (in tables). Bedrock is too near the surface for the specified use.

**Drainage class** (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

*Excessively drained.*—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.

*Somewhat excessively drained.*—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.

*Well drained.*—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.

*Moderately well drained.*—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically they are wet long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum, or periodically receive high rainfall, or both.

*Somewhat poorly drained.*—Water is removed slowly enough that the soil is wet for significant periods

during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.

*Poorly drained.*—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.

*Very poorly drained.*—Water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients.

**Esker** (geology). A narrow, winding ridge of stratified gravelly and sandy drift deposited by a stream flowing in a tunnel beneath a glacier.

**Excess fines** (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

**Fertility, soil.** The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

**Fibric soil material (peat).** The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

**Fine textured soil.** Sandy clay, silty clay, and clay.

**Flagstone.** A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist, 6 to 15 inches (15 to 37.5 centimeters) long.

**Flood plain.** A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

**Fragile** (in tables). A soil that is easily damaged by use or disturbance.

**Fragipan.** A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher

bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

**Frost action** (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

**Glacial drift** (geology). Pulverized and other rock material transported by glacial ice and then deposited. Also the sorted and unsorted material deposited by streams flowing from glaciers.

**Glacial outwash** (geology). Gravel, sand, and silt, commonly stratified, deposited by glacial melt water.

**Glacial till** (geology). Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

**Glaciofluvial deposits** (geology). Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

**Glaciolacustrine deposits**. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial melt water. Many deposits are interbedded or laminated.

**Gleyed soil**. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors and mottles.

**Grassed waterway**. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

**Gravel**. Rounded or angular fragments of rock up to 3 inches (2 millimeters to 7.5 centimeters) in diameter. An individual piece is a pebble.

**Gravelly soil material**. Material that is 15 to 50 percent, by volume, rounded or angular rock fragments, not prominently flattened, up to 3 inches (7.5 centimeters) in diameter.

**Green manure crop** (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

**Ground water** (geology). Water filling all the unblocked pores of underlying material below the water table.

**Gully**. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

**Hemic soil material (mucky peat)**. Organic soil material intermediate in degree of decomposition between the less decomposed fibric and the more decomposed sapric material.

**Horizon, soll**. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an upper case letter represents the major

horizons. Numbers or lower case letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the *Soil Survey Manual*. The major horizons of mineral soil are as follows:

*O horizon*.—An organic layer of fresh and decaying plant residue at the surface of a mineral soil.

*A horizon*.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

*B horizon*.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these. The combined A and B horizons are generally called the solum, or true soil. If a soil does not have a B horizon, the A horizon alone is the solum.

*C horizon*.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the A or B horizon. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, the Roman numeral II precedes the letter C.

*R layer*.—Consolidated rock beneath the soil. The rock commonly underlies a C horizon, but can be directly below an A or a B horizon.

**Hydrologic soil groups**. Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

**Impervious soil**. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

**Kame** (geology). An irregular, short ridge or hill of stratified glacial drift.

**Lacustrine deposit** (geology). Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

**Large stones** (in tables). Rock fragments 3 inches (7.5 centimeters) or more across. Large stones adversely affect the specified use of the soil.

**Liquid limit.** The moisture content at which the soil passes from a plastic to a liquid state.

**Loam.** Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

**Low strength.** The soil is not strong enough to support loads.

**Medium textured soil.** Very fine sandy loam, loam, silt loam, or silt.

**Metamorphic rock.** Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

**Mineral soil.** Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

**Minimum tillage.** Only the tillage essential to crop production and prevention of soil damage.

**Moderately coarse textured soil.** Sandy loam and fine sandy loam.

**Moderately fine textured soil.** Clay loam, sandy clay loam, and silty clay loam.

**Moraine** (geology). An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

**Mottling, soil.** Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few*, *common*, and *many*; size—*fine*, *medium*, and *coarse*; and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

**Muck.** Dark colored, finely divided, well decomposed organic soil material. (See Sapric soil material.)

**Munsell notation.** A designation of color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color of 10YR hue, value of 6, and chroma of 4.

**Neutral soil.** A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

**Organic matter.** Plant and animal residue in the soil in various stages of decomposition.

**Outwash, glacial.** Stratified sand and gravel produced by glaciers and carried, sorted, and deposited by glacial melt water.

**Outwash plain.** A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it is generally low in relief.

**Parent material.** The unconsolidated organic and mineral material in which soil forms.

**Peat.** Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

**Ped.** An individual natural soil aggregate, such as a granule, a prism, or a block.

**Pedon.** The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

**Percs slowly** (in tables). The slow movement of water through the soil adversely affecting the specified use.

**Permeability.** The quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward through the saturated soil. Terms describing permeability are:

Very slow.....	less than 0.06 inch
Slow.....	0.06 to 0.20 inch
Moderately slow.....	0.2 to 0.6 inch
Moderate.....	0.6 inch to 2.0 inches
Moderately rapid.....	2.0 to 6.0 inches
Rapid.....	6.0 to 20 inches
Very rapid.....	more than 20 inches

**Phase, soil.** A subdivision of a soil series based on features that affect its use and management. For example, slope, stoniness, and thickness.

**pH value.** A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

**Piping** (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

**Plasticity index.** The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

**Plastic limit.** The moisture content at which a soil changes from semisolid to plastic.

**Ponding.** Standing water on soils in closed depressions. The water can be removed only by percolation or evapotranspiration.

**Poorly graded.** Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

**Poor outlets** (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

**Profile, soil.** A vertical section of the soil extending through all its horizons and into the parent material.

**Reaction, soil.** A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction

because it is neither acid nor alkaline. The degree of acidity or alkalinity is expressed as—

	pH
Extremely acid.....	Below 4.5
Very strongly acid.....	4.5 to 5.0
Strongly acid.....	5.1 to 5.5
Medium acid.....	5.6 to 6.0
Slightly acid.....	6.1 to 6.5
Neutral.....	6.6 to 7.3
Mildly alkaline.....	7.4 to 7.8
Moderately alkaline.....	7.9 to 8.4
Strongly alkaline.....	8.5 to 9.0
Very strongly alkaline.....	9.1 and higher

**Relief.** The elevations or inequalities of a land surface, considered collectively.

**Residium (residual soil material).** Unconsolidated, weathered, or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

**Rock fragments.** Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

**Rooting depth** (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

**Root zone.** The part of the soil that can be penetrated by plant roots.

**Runoff.** The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

**Sapric soil material (muck).** The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

**Seepage** (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

**Series, soil.** A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

**Shrink-swell.** The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

**Silt.** As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

**Slope.** The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

**Slow refill** (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

**Small stones** (in tables). Rock fragments less than 3 inches (7.5 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

**Soil separates.** Mineral particles less than 2 mm in equivalent diameter and ranging between specified size limits. The names and sizes of separates recognized in the United States are as follows:

	Millimeters
Very coarse sand.....	2.0 to 1.0
Coarse sand.....	1.0 to 0.5
Medium sand.....	0.5 to 0.25
Fine sand.....	0.25 to 0.10
Very fine sand.....	0.10 to 0.05
Silt.....	0.05 to 0.002
Clay.....	less than 0.002

**Solum.** The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

**Stones.** Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter.

**Stony.** Refers to a soil containing stones in numbers that interfere with or prevent tillage.

**Stripcropping.** Growing crops in a systematic arrangement of strips or bands which provide vegetative barriers to wind and water erosion.

**Structure, soil.** The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

**Subsoil.** Technically, the B horizon; roughly, the part of the solum below plow depth.

**Substratum.** The part of the soil below the solum.

**Subsurface layer.** Technically, the A2 horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.

**Surface layer.** The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

**Taxadjuncts.** Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior.

**Terrace** (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

**Texture, soil.** The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand*, *loamy sand*, *sandy loam*, *loam*, *silt loam*, *silt*, *sandy clay loam*, *clay loam*, *silty clay loam*, *sandy clay*, *silty clay*, and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

**Thin layer** (in tables). Otherwise suitable soil material too thin for the specified use.

**Till plain.** An extensive flat to undulating area underlain by glacial till.

**Topsoil.** The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

**Upland** (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

**Varlant, soil.** A soil having properties sufficiently different from those of other known soils to justify a new series name, but occurring in such a limited geographic area that creation of a new series is not justified.

**Varve.** A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by melt water streams, in a glacial lake or other body of still water in front of a glacier.

**Weathering.** All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

**Well graded.** Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

**tables**

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TABLE 1.--TEMPERATURE AND PRECIPITATION

Month	Temperature <sup>1</sup>						Precipitation <sup>1</sup>				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have--		Average number of growing degree days <sup>2</sup>	Average	2 years in 10 will have--		Average number of days with 0.10 inch or more	Average snowfall
				Maximum temperature higher than--	Minimum temperature lower than--			Less than--	More than--		
<u>°F</u>	<u>°F</u>	<u>°F</u>	<u>°F</u>	<u>°F</u>	<u>Units</u>	<u>In</u>	<u>In</u>	<u>In</u>		<u>In</u>	
January----	27.3	5.1	16.2	52	-32	10	2.44	1.92	2.92	8	21.6
February---	29.3	4.6	17.0	49	-28	0	2.47	1.78	3.10	7	25.0
March-----	40.1	17.3	28.7	65	-15	13	2.84	1.70	3.86	8	17.7
April-----	53.6	27.9	40.8	81	3	119	3.28	2.27	4.19	7	6.8
May-----	68.9	39.3	54.2	90	21	448	3.74	2.10	5.07	9	.5
June-----	78.1	49.5	63.8	93	29	714	3.91	2.38	5.28	8	.0
July-----	81.9	54.0	68.0	95	37	868	3.95	2.66	5.12	9	.0
August-----	79.2	51.7	65.4	91	34	787	4.19	3.11	5.20	9	.0
September--	71.0	44.8	58.0	87	24	540	2.91	1.85	3.86	6	.0
October----	60.0	34.7	47.4	81	12	273	2.58	1.39	3.54	7	.4
November---	43.1	26.6	34.9	67	0	43	3.85	2.85	4.78	10	11.6
December---	30.3	12.2	21.3	58	-23	7	4.54	3.02	5.93	10	30.2
Year-----	55.2	30.6	43.0	95	-34	3,822	40.70	35.43	45.97	98	113.8

<sup>1</sup>Recorded in the period 1963-75 at Morrisville, Vt.

<sup>2</sup>A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40° F).

TABLE 2.--FREEZE DATES IN SPRING AND FALL

Probability	Temperature <sup>1</sup>		
	24° F or lower	28° F or lower	32° F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	May 22	May 31	June 12
2 years in 10 later than--	May 15	May 27	June 8
5 years in 10 later than--	May 2	May 21	June 2
First freezing temperature in fall:			
1 year in 10 earlier than--	September 26	September 14	September 8
2 years in 10 earlier than--	October 2	September 18	September 12
5 years in 10 earlier than--	October 15	September 28	September 20

<sup>1</sup>Recorded in the period 1963-75 at Morrisville, Vt.

TABLE 3.--GROWING SEASON

Probability	Daily minimum temperature during growing season <sup>1</sup>		
	Higher than 24° F	Higher than 28° F	Higher than 32° F
	<u>Days</u>	<u>Days</u>	<u>Days</u>
9 years in 10	143	110	94
8 years in 10	150	116	99
5 years in 10	164	128	109
2 years in 10	177	140	118
1 year in 10	184	146	123

<sup>1</sup>Recorded in the period 1963-75 at Morrisville, Vt.

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
AdB	Adams loamy fine sand, 2 to 8 percent slopes-----	4,660	1.5
AdC	Adams loamy fine sand, 8 to 15 percent slopes-----	3,497	1.2
AdD	Adams loamy fine sand, 15 to 25 percent slopes-----	1,787	0.6
AdE	Adams loamy fine sand, 25 to 50 percent slopes-----	3,937	1.3
AeC	Adams-Adams Variant loamy fine sands, rocky, 8 to 15 percent slopes-----	704	0.2
AeD	Adams-Adams Variant loamy fine sands, rocky, 15 to 25 percent slopes-----	276	0.1
AeE	Adams-Adams Variant loamy fine sands, rocky, 25 to 50 percent slopes-----	433	0.1
AgB	Allagash very fine sandy loam, 2 to 8 percent slopes-----	391	0.1
BeB	Berkshire fine sandy loam, 3 to 8 percent slopes-----	4,118	1.4
BeC	Berkshire fine sandy loam, 8 to 15 percent slopes-----	8,600	2.8
BeD	Berkshire fine sandy loam, 15 to 25 percent slopes-----	2,849	0.9
BkB	Berkshire very stony fine sandy loam, 3 to 8 percent slopes-----	538	0.2
BkC	Berkshire very stony fine sandy loam, 8 to 15 percent slopes-----	5,678	1.9
BkD	Berkshire very stony fine sandy loam, 15 to 25 percent slopes-----	3,979	1.3
BrB	Berkshire-Tunbridge fine sandy loams, rocky, 3 to 8 percent slopes-----	1,326	0.4
BrC	Berkshire-Tunbridge fine sandy loams, rocky, 8 to 15 percent slopes-----	7,821	2.6
BrD	Berkshire-Tunbridge fine sandy loams, rocky, 15 to 25 percent slopes-----	5,154	1.7
BtE	Berkshire and Marlow soils, 25 to 50 percent slopes-----	7,577	2.5
BuB	Boothbay silt loam, 3 to 8 percent slopes-----	1,938	0.6
BuC	Boothbay silt loam, 8 to 15 percent slopes-----	2,811	0.9
BuD	Boothbay silt loam, 15 to 25 percent slopes-----	884	0.3
Bx	Borochemists, deep-----	1,178	0.4
By	Borochemists, moderately deep over loamy substratum-----	1,096	0.4
CoB	Colton-Duxbury complex, 2 to 8 percent slopes-----	7,598	2.5
CoC	Colton-Duxbury complex, 8 to 15 percent slopes-----	4,467	1.5
CoD	Colton-Duxbury complex, 15 to 25 percent slopes-----	2,275	0.7
CoE	Colton-Duxbury complex, 25 to 50 percent slopes-----	5,890	1.9
CrB	Croghan loamy fine sand, 2 to 8 percent slopes-----	1,605	0.5
FrB	Fragiaquepts and Haplaquepts, 0 to 8 percent slopes-----	11,892	3.9
Ha	Hamlin silt loam-----	310	0.1
Hs	Histic Fluvaquents, frequently flooded-----	602	0.2
Le	Limerick Variant silt loam-----	579	0.2
LoE	Londonderry-Stratton complex, 25 to 60 percent slopes-----	10,672	3.5
LyB	Lyman-Tunbridge fine sandy loams, very rocky, 3 to 8 percent slopes-----	635	0.2
LyC	Lyman-Tunbridge fine sandy loams, very rocky, 8 to 15 percent slopes-----	4,036	1.3
LyD	Lyman-Tunbridge fine sandy loams, very rocky, 15 to 25 percent slopes-----	7,680	2.5
LyE	Lyman-Tunbridge fine sandy loams, very rocky, 25 to 60 percent slopes-----	47,001	15.5
MaB	Marlow fine sandy loam, 3 to 8 percent slopes-----	2,754	0.9
MaC	Marlow fine sandy loam, 8 to 15 percent slopes-----	3,570	1.2
MaD	Marlow fine sandy loam, 15 to 25 percent slopes-----	777	0.3
MrB	Marlow very stony fine sandy loam, 3 to 8 percent slopes-----	789	0.3
MrC	Marlow very stony fine sandy loam, 8 to 15 percent slopes-----	7,983	2.6
MrD	Marlow very stony fine sandy loam, 15 to 25 percent slopes-----	7,323	2.4
On	Ondawa fine sandy loam-----	1,770	0.6
PaA	Peacham stony muck, 0 to 5 percent slopes-----	1,319	0.4
PeB	Peru fine sandy loam, 3 to 8 percent slopes-----	4,246	1.4
PeC	Peru fine sandy loam, 8 to 15 percent slopes-----	3,535	1.2
PeD	Peru fine sandy loam, 15 to 25 percent slopes-----	416	0.1
PfB	Peru very stony fine sandy loam, 3 to 8 percent slopes-----	2,487	0.8
PfC	Peru very stony fine sandy loam, 8 to 15 percent slopes-----	6,197	2.0
PfD	Peru very stony fine sandy loam, 15 to 25 percent slopes-----	1,234	0.4
Po	Podunk fine sandy loam-----	1,378	0.5
PtB	Potsdam silt loam, 3 to 8 percent slopes-----	682	0.2
PtC	Potsdam silt loam, 8 to 15 percent slopes-----	1,479	0.5
PtD	Potsdam silt loam, 15 to 25 percent slopes-----	322	0.1
RkE	Ricker peat, very rocky, 15 to 80 percent slopes-----	272	0.1
Ru	Rumney fine sandy loam-----	1,583	0.5
SaB	Salmon very fine sandy loam, 3 to 8 percent slopes-----	254	0.1
SaB2	Salmon very fine sandy loam, 3 to 8 percent slopes, eroded-----	480	0.2
SaC	Salmon very fine sandy loam, 8 to 15 percent slopes-----	768	0.3
SaC2	Salmon very fine sandy loam, 8 to 15 percent slopes, eroded-----	1,176	0.4
SaD	Salmon very fine sandy loam, 15 to 25 percent slopes-----	328	0.1
SaD2	Salmon very fine sandy loam, 15 to 25 percent slopes, eroded-----	903	0.3
SaE2	Salmon very fine sandy loam, 25 to 50 percent slopes, eroded-----	1,847	0.6
SdC	Salmon Variant-Salmon very fine sandy loams, rocky, 8 to 15 percent slopes-----	1,559	0.5
SdD	Salmon Variant-Salmon very fine sandy loams, rocky, 15 to 25 percent slopes-----	1,665	0.5
SdE	Salmon Variant-Salmon very fine sandy loams, rocky, 25 to 50 percent slopes-----	1,226	0.4
SeD	Scantic Variant bouldery silt loam, 8 to 25 percent slopes-----	235	0.1
SeE	Scantic Variant bouldery silt loam, 25 to 50 percent slopes-----	207	0.1
Sr	Searsport muck-----	624	0.2
StC	Stratton-Londonderry complex, 8 to 25 percent slopes-----	617	0.2
SwA	Swanville silt loam, 0 to 6 percent slopes-----	2,192	0.7

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
Te	Teel silt loam-----	519	0.2
TuB	Tunbridge-Lyman fine sandy loams, rocky, 3 to 8 percent slopes-----	2,433	0.8
TuC	Tunbridge-Lyman fine sandy loams, rocky, 8 to 15 percent slopes-----	14,501	4.8
TuD	Tunbridge-Lyman fine sandy loams, rocky, 15 to 25 percent slopes-----	21,430	7.1
TuE	Tunbridge-Lyman fine sandy loams, rocky, 25 to 60 percent slopes-----	18,342	6.0
Ud	Udifuvents, frequently flooded-----	1,886	0.6
WAA	Walpole fine sandy loam, 0 to 6 percent slopes-----	1,951	0.6
	Water-----	1,819	0.6
	Total-----	303,552	100.0

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE

[Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil]

Soil name and map symbol	Corn silage	Irish potatoes	Alfalfa hay	Grass- legume hay	Grass hay	Pasture
	<u>Ton</u>	<u>Bu</u>	<u>Ton</u>	<u>Ton</u>	<u>Ton</u>	<u>AUM*</u>
AdB----- Adams	12	---	---	2.5	---	4.5
AdC----- Adams	12	---	---	2.5	---	4.5
AdD----- Adams	---	---	---	---	---	---
AdE----- Adams	---	---	---	---	---	---
AeC----- Adams-Adams Variant	12	---	---	2.5	---	4.5
AeD----- Adams-Adams Variant	---	---	---	---	---	---
AeE----- Adams-Adams Variant	---	---	---	---	---	---
AgB----- Allagash	22	601	---	4.5	3.5	8.5
BeB----- Berkshire	22	551	4.5	4.0	4.0	6.5
BeC----- Berkshire	20	501	4.0	3.5	3.5	6.5
BeD----- Berkshire	---	---	3.5	3.0	3.0	5.5
BkB, BkC, BkD----- Berkshire	---	---	---	---	---	4.0
BrB----- Berkshire-Tunbridge	22	---	4.4	4.0	4.0	6.5
BrC----- Berkshire-Tunbridge	19	---	4.0	3.5	3.5	6.5
BrD----- Berkshire-Tunbridge	---	---	3.5	3.0	3.0	5.5
BtE----- Berkshire and Marlow	---	---	---	---	---	---
BuB----- Boothbay	22	450	4.0	4.0	4.5	7.7
BuC----- Boothbay	20	450	3.5	3.5	4.0	6.5
BuD----- Boothbay	---	---	3.0	3.0	3.5	6.0
Bx**, By**. Borochemists						
CoB----- Colton-Duxbury	15	450	2.5	2.0	2.5	5.0

See footnotes at end of table.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn silage	Irish potatoes	Alfalfa hay	Grass- legume hay	Grass hay	Pasture
	<u>Ton</u>	<u>Bu</u>	<u>Ton</u>	<u>Ton</u>	<u>Ton</u>	<u>AUM*</u>
CoC----- Colton-Duxbury	12	450	2.5	2.0	2.5	5.0
CoD----- Colton-Duxbury	---	---	2.5	2.5	2.0	5.0
CoE----- Colton-Duxbury	---	---	---	---	---	---
CrB----- Croghan	14	---	3.0	3.0	---	5.5
FrB----- Fragiaquepts and Haplaquepts	---	---	---	---	---	---
Ha----- Hamlin	26	651	6.0	5.0	---	7.5
Hs**. Histic Fluvaquents						
Le----- Limerick Variant	16	---	---	2.5	3.0	6.0
LoE----- Londonderry-Stratton	---	---	---	---	---	---
LyB----- Lyman-Tunbridge	---	---	---	---	---	4.8
LyC----- Lyman-Tunbridge	---	---	---	---	---	4.8
LyD----- Lyman-Tunbridge	---	---	---	---	---	3.8
LyE----- Lyman-Tunbridge	---	---	---	---	---	---
MaB----- Marlow	22	551	4.5	4.0	4.0	8.5
MaC----- Marlow	20	501	4.5	4.0	4.0	8.5
MaD----- Marlow	---	---	4.0	3.5	3.5	7.5
MrB, MrC, MrD----- Marlow	---	---	---	---	---	4.0
On----- Ondawa	24	551	4.5	4.0	---	8.5
PaA----- Peacham	---	---	---	---	---	---
PeB----- Peru	20	450	4.0	4.0	4.0	8.0
PeC----- Peru	18	400	4.0	4.0	4.0	8.0
PeD----- Peru	---	---	3.5	3.5	3.5	7.0

See footnotes at end of table.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn silage	Irish potatoes	Alfalfa hay	Grass- legume hay	Grass hay	Pasture
	<u>Ton</u>	<u>Bu</u>	<u>Ton</u>	<u>Ton</u>	<u>Ton</u>	<u>AUM*</u>
PfB, PfC, PfD----- Peru	---	---	---	---	---	4.0
Po----- Podunk	24	501	4.0	4.5	4.5	8.5
PtB----- Potsdam	20	450	4.0	4.0	---	7.5
PtC----- Potsdam	19	367	3.5	3.5	---	6.5
PtD----- Potsdam	---	---	3.0	3.0	---	5.5
RkE----- Ricker	---	---	---	---	---	---
Ru----- Runney	20	---	---	3.5	4.0	6.5
SaB----- Salmon	22	501	5.5	4.5	---	8.5
SaB2----- Salmon	20	434	5.0	4.0	---	7.5
SaC----- Salmon	21	450	5.5	4.5	---	8.5
SaC2----- Salmon	17	384	4.5	3.5	---	6.5
SaD----- Salmon	---	---	4.0	3.5	---	6.5
SaD2----- Salmon	---	---	---	---	---	---
SaE2----- Salmon	---	---	---	---	---	---
SdC----- Salmon Variant-Salmon	---	---	---	4.5	---	7.5
SdD----- Salmon Variant-Salmon	---	---	---	3.4	---	6.5
SdE----- Salmon Variant-Salmon	---	---	---	---	---	---
SeD----- Scantic Variant	---	---	---	---	2.5	4.5
SeE----- Scantic Variant	---	---	---	---	---	4.0
Sr----- Searsport	---	---	---	---	---	---
StC----- Stratton-Londonderry	---	---	---	---	---	---
SwA----- Swanville	17	---	---	3.2	3.7	6.2
Te----- Teel	24	601	4.5	3.5	---	6.5

See footnotes at end of table.



TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn silage	Irish potatoes	Alfalfa hay	Grass- legume hay	Grass hay	Pasture
	<u>Ton</u>	<u>Bu</u>	<u>Ton</u>	<u>Ton</u>	<u>Ton</u>	<u>AUM*</u>
TuB----- Tunbridge-Lyman	18	---	4.0	2.5	3.0	4.8
TuC----- Tunbridge-Lyman	16	---	4.0	2.5	3.0	4.8
TuD----- Tunbridge-Lyman	---	---	3.5	2.0	---	3.8
TuE----- Tunbridge-Lyman	---	---	---	---	---	---
Ud**. Udifluvents						
WaA----- Walpole	18	---	---	3.0	3.0	5.5

\* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

\*\* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 6.--CAPABILITY CLASSES AND SUBCLASSES

[Miscellaneous areas are excluded. Absence of an entry indicates no acreage]

Class	Total acreage	Major management concerns (Subclass)			
		Erosion (e)	Wetness (w)	Soil problem (s)	Climate (c)
		<u>Acres</u>	<u>Acres</u>	<u>Acres</u>	<u>Acres</u>
I	2,080	---	---	---	---
II	22,600	14,519	8,081	---	---
III	57,953	43,245	5,718	8,990	---
IV	47,391	38,650	2,192	6,549	---
V	---	---	---	---	---
VI	57,180	17,167	---	39,686	---
VII	98,833	79,292	624	13,902	---
VIII	---	---	---	---	---

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY

[Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that information was not available]

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
AdB, AdC----- Adams	5s	Slight	Slight	Severe	Slight	Eastern white pine-- Red pine----- Red spruce----- Sugar maple-----	55 55 35 47	Eastern white pine, red pine, European larch.
AdD----- Adams	5s	Slight	Moderate	Severe	Slight	Eastern white pine-- Red pine----- Red spruce----- Sugar maple-----	55 55 35 47	Eastern white pine, red pine, European larch.
AdE----- Adams	5s	Moderate	Severe	Severe	Slight	Eastern white pine-- Red pine----- Red spruce----- Sugar maple-----	55 55 35 47	Eastern white pine, red pine, European larch.
AeC*: Adams-----	5s	Slight	Slight	Severe	Slight	Eastern white pine-- Red pine----- Red spruce----- Sugar maple-----	55 55 35 47	Eastern white pine, red pine, European larch.
Adams Variant-----	5s	Slight	Slight	Moderate	Slight	Eastern white pine-- Sugar maple-----	50 45	Eastern white pine, red pine, European larch.
AeD*: Adams-----	5s	Slight	Moderate	Severe	Slight	Eastern white pine-- Red pine----- Red spruce----- Sugar maple-----	55 55 35 47	Eastern white pine, red pine, European larch.
Adams Variant-----	5s	Slight	Moderate	Moderate	Slight	Eastern white pine-- Sugar maple-----	50 45	Eastern white pine, red pine, European larch.
AeE*: Adams-----	5s	Moderate	Severe	Severe	Slight	Eastern white pine-- Red pine----- Red spruce----- Sugar maple-----	55 55 35 47	Eastern white pine, red pine, European larch.
Adams Variant-----	5r	Moderate	Severe	Moderate	Slight	Eastern white pine-- Sugar maple-----	50 45	Eastern white pine, red pine, European larch.
AgB----- Allagash	4o	Slight	Slight	Slight	Slight	Red pine----- Eastern white pine--	71 59	Eastern white pine, red pine, European larch, white spruce, Scotch pine.
BeB, BeC----- Berkshire	3o	Slight	Slight	Slight	Slight	Eastern white pine-- Sugar maple----- Red spruce----- White ash----- Yellow birch----- Paper birch----- Balsam fir----- Red pine-----	72 52 50 62 55 60 60 65	Eastern white pine, red pine, white spruce, balsam fir.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
BeD----- Berkshire	3r	Slight	Moderate	Slight	Slight	Eastern white pine-- Sugar maple----- Red spruce----- White ash----- Yellow birch----- Paper birch----- Balsam fir----- Red pine-----	72 52 50 62 55 60 60 65	Eastern white pine, red pine, white spruce, balsam fir.
BkB, BkC, BkD----- Berkshire	3r	Moderate	Severe	Slight	Slight	Eastern white pine-- Sugar maple----- Red spruce----- White ash----- Yellow birch----- Paper birch----- Balsam fir----- Red pine-----	72 52 50 62 55 60 60 65	Eastern white pine, red pine, white spruce, balsam fir.
BrB*, BrC*: Berkshire-----	3o	Slight	Slight	Slight	Slight	Eastern white pine-- Sugar maple----- Red spruce----- White ash----- Yellow birch----- Paper birch----- Balsam fir----- Red pine-----	72 52 50 62 55 60 60 65	Eastern white pine, red pine, white spruce, balsam fir.
Tunbridge-----	3o	Slight	Slight	Slight	Slight	Eastern white pine-- Red spruce-----	75 55	Eastern white pine, white spruce, red spruce.
BrD*: Berkshire-----	3r	Slight	Moderate	Slight	Slight	Eastern white pine-- Sugar maple----- Red spruce----- White ash----- Yellow birch----- Paper birch----- Balsam fir----- Red pine-----	72 52 50 62 55 60 60 65	Eastern white pine, red pine, white spruce, balsam fir.
Tunbridge-----	3r	Slight	Moderate	Slight	Slight	Eastern white pine-- Red spruce-----	70 75	Eastern white pine, white spruce, red spruce.
BtE*: Berkshire-----	3r	Moderate	Severe	Slight	Slight	Eastern white pine-- Sugar maple----- Red spruce----- White ash----- Yellow birch----- Paper birch----- Balsam fir----- Red pine-----	72 52 50 62 55 60 60 65	Eastern white pine, red pine, white spruce, balsam fir.
Marlow-----	3r	Moderate	Severe	Slight	Slight	Eastern white pine-- Balsam fir----- Red spruce----- Sugar maple----- Red pine-----	73 57 48 59 64	Eastern white pine, white spruce, balsam fir.
BuB, BuC----- Boothbay	4o	Slight	Slight	Slight	Slight	Eastern white pine-- Eastern hemlock----- Balsam fir----- Paper birch----- Red maple-----	65 --- 55 56 56	Eastern white pine, white spruce.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
BuD----- Boothbay	4r	Slight	Moderate	Slight	Slight	Eastern white pine-- Eastern hemlock----- Balsam fir----- Paper birch----- Red maple-----	65 --- 55 56 56	Eastern white pine, white spruce.
CoB*, CoC*: Colton-----	4s	Slight	Slight	Severe	Slight	Eastern white pine-- Red pine----- Red spruce----- Sugar maple-----	62 52 39 61	Eastern white pine, red pine.
Duxbury-----	4o	Slight	Slight	Slight	Slight	Eastern white pine-- Sugar maple----- Red pine----- Eastern hemlock----- Red spruce-----	65 55 --- --- ---	Eastern white pine, red pine, red spruce.
CoD*: Colton-----	4s	Slight	Moderate	Severe	Slight	Eastern white pine-- Red pine----- Red spruce----- Sugar maple-----	62 52 39 61	Eastern white pine, red pine.
Duxbury-----	4r	Slight	Moderate	Slight	Slight	Eastern white pine-- Sugar maple----- Red pine----- Eastern hemlock----- Red spruce-----	65 55 --- --- ---	Eastern white pine, red pine, red spruce.
CoE*: Colton-----	4s	Moderate	Severe	Severe	Slight	Eastern white pine-- Red pine----- Red spruce----- Sugar maple-----	62 52 39 61	Eastern white pine, red pine.
Duxbury-----	4r	Moderate	Severe	Slight	Slight	Eastern white pine-- Sugar maple----- Red pine----- Eastern hemlock----- Red spruce-----	65 55 --- --- ---	Eastern white pine, red pine, red spruce.
CrB----- Croghan	4s	Slight	Slight	Moderate	Slight	Eastern white pine-- Red pine----- Sugar maple-----	65 65 55	Eastern white pine, red pine, European larch.
Ha----- Hamlin	2o	Slight	Slight	Slight	Slight	Sugar maple-----	70	Eastern white pine, black locust, Norway spruce, black walnut, European larch.
Le----- Limerick Variant	4w	Slight	Severe	Severe	Severe	Eastern white pine--	65	Eastern white pine, white spruce, northern white-cedar.
LoE*: Londonderry-----	7d	Severe	Severe	Severe	Severe	Balsam fir----- Red spruce-----	--- ---	
Stratton-----	6s	Severe	Severe	Severe	Moderate	Red spruce----- Balsam fir----- Paper birch-----	41 --- ---	Balsam fir, white spruce.
LyB*, LyC*: Lyman-----	4d	Slight	Slight	Severe	Moderate	Sugar maple----- Balsam fir----- Red spruce-----	50 60 40	Eastern white pine, red pine, white spruce, balsam fir.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
LyB*, LyC*: Tunbridge-----	3o	Slight	Slight	Slight	Slight	Eastern white pine-- Red spruce-----	70 75	Eastern white pine, white spruce, red spruce.
LyD*: Lyman-----	4d	Slight	Moderate	Severe	Moderate	Sugar maple----- Balsam fir----- Red spruce-----	50 60 40	Eastern white pine, red pine, white spruce, balsam fir.
Tunbridge-----	3r	Slight	Moderate	Slight	Slight	Eastern white pine-- Red spruce-----	75 55	Eastern white pine, white spruce, red spruce.
LyE*: Lyman-----	4d	Moderate	Severe	Severe	Moderate	Sugar maple----- Balsam fir----- Red spruce-----	50 60 40	Eastern white pine, red pine, white spruce, balsam fir.
Tunbridge-----	3r	Moderate	Severe	Slight	Slight	Eastern white pine-- Red spruce-----	75 55	Eastern white pine, white spruce, red spruce.
MaB, MaC----- Marlow	3o	Slight	Slight	Slight	Slight	Eastern white pine-- Balsam fir----- Red spruce----- Sugar maple----- Red pine-----	73 57 48 59 64	Eastern white pine, white spruce, balsam fir.
MaD----- Marlow	3r	Slight	Moderate	Slight	Slight	Eastern white pine-- Balsam fir----- Red spruce----- Sugar maple----- Red pine-----	73 57 48 59 64	Eastern white pine, white spruce, balsam fir.
MrB, MrC----- Marlow	3o	Slight	Slight	Slight	Slight	Eastern white pine-- Balsam fir----- Red spruce----- Sugar maple----- Red pine-----	73 57 48 59 64	Eastern white pine, white spruce, balsam fir.
MrD----- Marlow	3r	Slight	Moderate	Slight	Slight	Eastern white pine-- Balsam fir----- Red spruce----- Sugar maple----- Red pine-----	73 57 48 59 64	Eastern white pine, white spruce, balsam fir.
On----- Ondawa	4o	Slight	Slight	Slight	Slight	Eastern white pine-- Red pine----- Red spruce----- Sugar maple-----	57 65 45 55	Eastern white pine, white spruce, red pine.
PaA----- Peacham	---	-----	-----	-----	-----		---	
PeB, PeC----- Peru	3o	Slight	Slight	Slight	Slight	Sugar maple----- Eastern white pine-- Red spruce-----	57 71 45	Eastern white pine, red pine, white spruce, European larch.
PeD----- Peru	3r	Slight	Moderate	Slight	Slight	Sugar maple----- Eastern white pine-- Red spruce-----	57 71 45	Eastern white pine, red pine, white spruce, European larch.
PfB, PfC----- Peru	3o	Slight	Slight	Slight	Slight	Sugar maple----- Eastern white pine-- Red spruce-----	57 71 45	Eastern white pine, red pine, white spruce, European larch.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
PfD----- Peru	3r	Slight	Moderate	Slight	Slight	Sugar maple----- Eastern white pine-- Red spruce-----	57 71 45	Eastern white pine, red pine, white spruce, European
Po----- Podunk	3o	Slight	Slight	Slight	Slight	Eastern white pine-- Red pine----- Red spruce-----	75 75 45	Eastern white pine, red pine, white spruce.
PtB----- Potsdam	3o	Slight	Slight	Slight	Slight	Sugar maple----- Eastern white pine-- White ash-----	65 75 75	Eastern white pine, red pine, Norway spruce, white spruce, European larch.
PtC----- Potsdam	3r	Moderate	Slight	Slight	Slight	Sugar maple----- Eastern white pine-- White ash-----	65 75 75	Eastern white pine, red pine, Norway spruce, white spruce, European larch.
PtD----- Potsdam	3r	Severe	Moderate	Slight	Slight	Sugar maple----- Eastern white pine-- White ash-----	65 75 75	Eastern white pine, red pine, Norway spruce, white spruce, European larch.
RkE----- Ricker	7d	Severe	Severe	Severe	Severe	Balsam fir----- Red spruce-----	--- ---	
Ru----- Rumney	4w	Slight	Severe	Severe	Severe	Eastern white pine-- Red maple----- Red spruce-----	57 65 45	Eastern white pine, white spruce, northern white-cedar.
SaB, SaB2----- Salmon	3o	Slight	Slight	Slight	Slight	Sugar maple----- Black cherry----- White ash----- Eastern white pine--	65 70 70 75	Eastern white pine, Norway spruce, European larch, red pine, white spruce.
SaC, SaC2----- Salmon	3r	Moderate	Slight	Slight	Slight	Sugar maple----- Black cherry----- White ash----- Eastern white pine--	65 70 70 75	Eastern white pine, Norway spruce, European larch, red pine, white spruce.
SaD, SaD2----- Salmon	3r	Severe	Moderate	Slight	Slight	Sugar maple----- Black cherry----- White ash----- Eastern white pine--	65 70 70 75	Eastern white pine, Norway spruce, European larch, red pine, white spruce.
SaE2----- Salmon	3r	Severe	Severe	Slight	Slight	Sugar maple----- Black cherry----- White ash----- Eastern white pine--	65 70 70 75	Eastern white pine, Norway spruce, European larch, red
SdC*: Salmon Variant----	3r	Moderate	Slight	Slight	Slight	Sugar maple----- Eastern white pine-- White spruce-----	48 70 60	Eastern white pine, red pine, white spruce, Norway spruce.
Salmon-----	3r	Moderate	Slight	Slight	Slight	Sugar maple----- Black cherry----- White ash----- Eastern white pine--	65 70 70 75	Eastern white pine, Norway spruce, European larch, red pine, white spruce.

See footnote at end of table.



TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
SdD*: Salmon Variant----	3r	Severe	Moderate	Slight	Slight	Sugar maple----- Eastern white pine--	48 70	White pine, red pine, white spruce Norway spruce.
Salmon-----	3r	Severe	Moderate	Slight	Slight	Sugar maple----- Black cherry----- White ash----- Eastern white pine--	65 70 70 75	Eastern white pine, Norway spruce, European larch, red pine, white spruce.
SdE*: Salmon Variant----	3r	Severe	Moderate	Slight	Slight	Sugar maple----- Eastern white pine--	48 70	White pine, red pine, white spruce, Norway spruce.
Salmon-----	3r	Severe	Severe	Slight	Slight	Sugar maple----- Black cherry----- White ash----- Eastern white pine--	65 70 70 75	Eastern white pine, Norway spruce, European larch, red pine, white spruce.
SeD----- Scantic Variant	5w	Slight	Severe	Severe	Severe	Red maple----- Balsam fir----- Eastern hemlock---- Eastern white pine--	50 --- --- ---	Eastern white pine.
SeE----- Scantic Variant	5w	Moderate	Severe	Severe	Severe	Red maple----- Balsam fir----- Eastern hemlock---- Eastern white pine	50 --- --- ---	Eastern white pine.
Sr----- Searsport	5w	Slight	Severe	Severe	Severe	Eastern white pine-- Red maple----- Northern white-cedar Balsam fir----- European larch----- Tamarack-----	58 64 45 53 --- ---	Northern white-cedar, European larch.
StC*: Stratton-----	6d	Moderate	Moderate	Moderate	Moderate	Red spruce----- Spruce fir----- Northern hardwoods--	41 58 50	Balsam fir, white spruce.
Londonderry-----	7d	Severe	Severe	Severe	Severe	Balsam fir----- Red spruce-----	--- ---	
SwA----- Swanville	5w	Slight	Severe	Severe	Severe	Eastern white pine-- Red spruce----- Sugar maple-----	58 50 50	Eastern white pine, red spruce, northern white-cedar.
Te----- Teel	2o	Slight	Slight	Slight	Slight	Sugar maple----- Eastern white pine White ash	70 85 85	Eastern white pine, Norway spruce, black walnut, European larch.
TuB*, TuC*: Tunbridge-----	3o	Slight	Slight	Slight	Slight	Eastern white pine-- Red spruce-----	75 55	Eastern white pine, white spruce, red spruce.
Lyman-----	4d	Slight	Slight	Severe	Moderate	Sugar maple----- Balsam fir----- Red spruce-----	50 60 40	Eastern white pine, red pine, white spruce, balsam fir.
TuD*: Tunbridge-----	3r	Slight	Moderate	Slight	Slight	Eastern white pine-- Red spruce-----	75 55	Eastern white pine, white spruce, red spruce.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
TuD*: Lyman-----	4d	Slight	Moderate	Severe	Moderate	Sugar maple----- Balsam fir----- Red spruce-----	50 60 40	Eastern white pine, red pine, white spruce, balsam fir.
TuE*: Tunbridge-----	3r	Moderate	Severe	Slight	Slight	Eastern white pine-- Red spruce-----	75 55	Eastern white pine, white spruce, red spruce.
Lyman-----	4d	Moderate	Severe	Severe	Moderate	Sugar maple----- Balsam fir----- Red spruce-----	50 60 40	Eastern white pine, red pine, white spruce, balsam fir.
WaA----- Walpole	4w	Slight	Severe	Severe	Severe	Eastern white pine-- Red spruce----- Red maple-----	68 43 75	Eastern white pine, white spruce, northern white-cedar, Norway spruce.

\* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 8.--RECREATIONAL DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
AdB----- Adams	Slight-----	Slight-----	Moderate: slope.	Slight-----	Severe: droughty.
AdC----- Adams	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Severe: droughty.
AdD----- Adams	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope, droughty.
AdE----- Adams	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, droughty.
AeC*: Adams-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Severe: droughty.
Adams Variant-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Severe: droughty.
AeD*: Adams-----	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope, droughty.
Adams Variant-----	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope, droughty.
AeE*: Adams-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, droughty.
Adams Variant-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, droughty.
AgB----- Allagash	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
BeB----- Berkshire	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Slight.
BeC----- Berkshire	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
BeD----- Berkshire	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
BkB----- Berkshire	Moderate: large stones.	Moderate: large stones.	Severe: large stones.	Slight-----	Moderate: large stones.
BkC----- Berkshire	Moderate: slope, large stones.	Moderate: slope, large stones.	Severe: slope, large stones.	Slight-----	Moderate: slope, large stones.
BkD----- Berkshire	Severe: slope.	Severe: slope.	Severe: slope, large stones.	Moderate: slope.	Severe: slope.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
BrB*:					
Berkshire-----	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Slight.
Tunbridge-----	Slight-----	Slight-----	Moderate: slope, depth to rock, small stones.	Slight-----	Moderate: thin layer.
BrC*:					
Berkshire-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
Tunbridge-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope, thin layer.
BrD*:					
Berkshire-----	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Tunbridge-----	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
BtE*:					
Berkshire-----	Severe: slope.	Severe: slope.	Severe: slope, large stones.	Severe: slope.	Severe: slope.
Marlow-----	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: slope.	Severe: slope.
BuB-----	Severe: wetness.	Moderate: wetness, percs slowly.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
BuC-----	Severe: wetness.	Moderate: slope, wetness, percs slowly.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, slope.
BuD-----	Severe: slope, wetness.	Severe: slope.	Severe: wetness.	Moderate: wetness, slope.	Severe: slope.
Bx*, By*. Borochemists					
CoB*:					
Colton-----	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Severe: droughty.
Duxbury-----	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
CoC*:					
Colton-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Severe: droughty.
Duxbury-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.

See footnote at end of table

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
CoD*: Colton-----	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: droughty, slope.
Duxbury-----	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
CoE*: Colton-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
Duxbury-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
CrB----- Croghan	Moderate: wetness.	Moderate: wetness.	Moderate: slope, wetness.	Moderate: wetness.	Severe: droughty.
FrB*: Fraglaquepts. Haplaquepts.					
Ha----- Hamlin	Severe: floods.	Slight-----	Moderate: floods.	Slight-----	Moderate: floods.
Hs*. Histic Fluvaquents					
Le----- Limerick Variant	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.
LoE*: Londonderry-----	Severe: slope, depth to rock, fragile.	Severe: slope, depth to rock, erodes easily.	Severe: slope, depth to rock, fragile.	Severe: slope, depth to rock, fragile.	Severe: slope, thin layer.
Stratton-----	Severe: slope, depth to rock, fragile.	Severe: slope, depth to rock, fragile.	Severe: slope, depth to rock, fragile.	Severe: slope, fragile.	Severe: slope, thin layer.
LyB*: Lyman-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock, small stones.	Slight-----	Severe: thin layer, droughty.
Tunbridge-----	Slight-----	Slight-----	Moderate: slope, depth to rock, small stones.	Slight-----	Moderate: thin layer.
LyC*: Lyman-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock, small stones.	Slight-----	Severe: thin layer, droughty.
Tunbridge-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope, thin layer.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
LyD*: Lyman-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock, small stones.	Moderate: slope.	Severe: slope, thin layer, droughty.
Tunbridge-----	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
LyE*: Lyman-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock, small stones.	Severe: slope.	Severe: slope, thin layer, droughty.
Tunbridge-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
MaB----- Marlow	Moderate: percs slowly, wetness.	Moderate: percs slowly, wetness.	Moderate: slope, small stones, percs slowly.	Slight-----	Slight.
MaC----- Marlow	Moderate: slope, percs slowly, wetness.	Moderate: slope, percs slowly, wetness.	Severe: slope.	Slight-----	Moderate: slope.
MaD----- Marlow	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
MrB----- Marlow	Moderate: large stones, percs slowly, wetness.	Moderate: large stones, percs slowly, wetness.	Severe: large stones.	Slight-----	Moderate: large stones.
MrC----- Marlow	Moderate: slope, large stones, wetness.	Moderate: slope, large stones, wetness.	Severe: large stones, slope.	Slight-----	Moderate: large stones, slope.
MrD----- Marlow	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Moderate: slope.	Severe: slope.
On----- Ondawa	Severe: floods.	Slight-----	Moderate: floods.	Slight-----	Moderate: floods.
PaA----- Peacham	Severe: wetness, percs slowly.	Severe: wetness, excess humus.	Severe: large stones, wetness.	Severe: wetness, excess humus.	Severe: wetness, excess humus.
PeB----- Peru	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, small stones, percs slowly.	Moderate: wetness.	Moderate: wetness.
PeC----- Peru	Moderate: slope, wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Severe: slope.	Moderate: wetness.	Moderate: wetness, slope.
PeD----- Peru	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: wetness, slope.	Severe: slope.
PfB----- Peru	Moderate: large stones, wetness, percs slowly.	Moderate: wetness, large stones, percs slowly.	Severe: large stones.	Moderate: wetness.	Moderate: large stones, wetness.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
PfC----- Peru	Moderate: slope, large stones, wetness.	Moderate: slope, wetness, large stones.	Severe: large stones, slope.	Moderate: wetness.	Moderate: large stones, wetness, slope.
PfD----- Peru	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Moderate: wetness, slope.	Severe: slope.
Po----- Podunk	Severe: floods.	Moderate: floods, wetness.	Severe: floods.	Moderate: floods, wetness.	Severe: floods.
PtB----- Potsdam	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, small stones, wetness.	Moderate: erodes easily.	Moderate: wetness.
PtC----- Potsdam	Moderate: slope, wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Severe: slope.	Severe: erodes easily.	Moderate: wetness, slope.
PtD----- Potsdam	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
RkE----- Ricker	Severe: slope, excess humus, depth to rock.	Severe: slope, excess humus, too acid.	Severe: slope, excess humus, depth to rock.	Severe: excess humus, slope, fragile.	Severe: slope, thin layer, excess humus.
Ru----- Rumney	Severe: floods, wetness.	Severe: wetness.	Severe: wetness, floods.	Severe: wetness.	Severe: floods, wetness.
SaB, SaB2----- Salmon	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
SaC, SaC2----- Salmon	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
SaD, SaD2----- Salmon	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
SaE2----- Salmon	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
SdC*: Salmon Variant-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope, thin layer.
Salmon-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
SdD*: Salmon Variant-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
Salmon-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
SdE*: Salmon Variant-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily, slope.	Severe: slope.
Salmon-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
SeD----- Scantic Variant	Severe: slope, wetness.	Severe: slope, wetness.	Severe: slope, wetness, large stones.	Severe: wetness.	Severe: slope, too clayey, wetness.
SeE----- Scantic Variant	Severe: slope, wetness.	Severe: slope, wetness.	Severe: slope, wetness, large stones.	Severe: slope, wetness.	Severe: slope, too clayey, wetness.
Sr----- Searsport	Severe: wetness, excess humus.	Severe: wetness, excess humus.	Severe: excess humus, wetness.	Severe: wetness, excess humus.	Severe: wetness, excess humus.
StC*: Stratton-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: fragile.	Severe: slope, thin layer.
Londonderry-----	Severe: slope, depth to rock, fragile.	Severe: slope, depth to rock, erodes easily.	Severe: slope, depth to rock, fragile.	Severe: depth to rock, fragile.	Severe: slope, thin layer.
SwA----- Swanville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Te----- Teel	Severe: floods, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
TuB*: Tunbridge-----	Slight-----	Slight-----	Moderate: slope, depth to rock, small stones.	Slight-----	Moderate: thin layer.
Lyman-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock, small stones.	Slight-----	Severe: thin layer, droughty.
TuC*: Tunbridge-----	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope, thin layer.
Lyman-----	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock, small stones.	Slight-----	Severe: thin layer, droughty.
TuD*: Tunbridge-----	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Lyman-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock, small stones.	Moderate: slope.	Severe: slope, thin layer, droughty.
TuE*: Tunbridge-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Lyman-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock, small stones.	Severe: slope.	Severe: slope, thin layer, droughty.

See footnote at end of table.



TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
Ud*. Udifluvents					
WaA----- Walpole	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.

\* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 9.--WILDLIFE HABITAT

[See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
AdB, AdC, AdD----- Adams	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
AdE----- Adams	Very poor.	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
AeC*: Adams-----	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Adams Variant-----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
AeD*: Adams-----	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Adams Variant-----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
AeE*: Adams-----	Very poor.	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Adams Variant-----	Very poor.	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
AgB----- Allagash	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
BeB----- Berkshire	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
BeC----- Berkshire	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
BeD----- Berkshire	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
BkB----- Berkshire	Very poor.	Poor	Good	Good	Good	Poor	Very poor.	Poor	Good	Very poor.
BkC, BkD----- Berkshire	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
BrB*: Berkshire-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Tunbridge-----	Fair	Good	Good	Fair	Fair	Very poor.	Very poor.	Good	Fair	Very poor.
BrC*: Berkshire-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Tunbridge-----	Fair	Good	Good	Fair	Fair	Very poor.	Very poor.	Good	Fair	Very poor.
BrD*: Berkshire-----	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
BrD*: Tunbridge-----	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
BtE*: Berkshire-----	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
Marlow-----	Very poor.	Very poor.	Good	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
BuB----- Boothbay	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
BuC----- Boothbay	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
BuD----- Boothbay	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Bx*, By*. Borohemists										
CoB*, CoC*: Colton-----	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
Duxbury-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
CoD*: Colton-----	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
Duxbury-----	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
CoE*: Colton-----	Very poor.	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Duxbury-----	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
CrB----- Croghan	Poor	Fair	Fair	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.
FrB*: Fraglaquepts. Haplaquepts.										
Ha----- Hamlin	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Hs*. Histic Fluvaquents										
Le----- Limerick Variant	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
LoE*: Londonderry-----	Very poor.	Very poor.	Fair	Poor	Poor	Very poor.	Very poor.	Very poor.	Poor	Very poor.

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
LoE*: Stratton-----	Very poor.	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
LyB*, LyC*: Lyman-----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Tunbridge-----	Fair	Good	Good	Fair	Fair	Very poor.	Very poor.	Good	Fair	Very poor.
LyD*: Lyman-----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Tunbridge-----	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
LyE*: Lyman-----	Very poor.	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Tunbridge-----	Very poor.	Poor	Good	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
MaB----- Marlow	Fair	Good	Good	Fair	Fair	Poor	Very poor.	Good	Good	Very poor.
MaC----- Marlow	Fair	Good	Good	Fair	Fair	Very poor.	Very poor.	Good	Good	Very poor.
MaD----- Marlow	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Good	Very poor.
MrB----- Marlow	Very poor.	Poor	Good	Fair	Fair	Poor	Very poor.	Poor	Good	Very poor.
MrC, MrD----- Marlow	Very poor.	Poor	Good	Fair	Fair	Very poor.	Very poor.	Poor	Good	Very poor.
On----- Ondawa	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
PaA----- Peacham	Very poor.	Poor	Poor	Poor	Poor	Good	Poor	Poor	Poor	Fair.
PeB----- Peru	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
PeC----- Peru	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
PeD----- Peru	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
PfB----- Peru	Very poor.	Poor	Good	Good	Good	Poor	Very poor.	Poor	Good	Very poor.
PfC, PfD----- Peru	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
Po----- Podunk	Poor	Fair	Fair	Good	Good	Poor	Poor	Fair	Good	Poor.
PtB----- Potsdam	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
PtC----- Potsdam	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
PtD----- Potsdam	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
RkE----- Ricker	Very poor.	Very poor.	Poor	Poor	Poor	Very poor.	Very poor.	Very poor.	Poor	Very poor.
Ru----- Rumney	Poor	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair.
SaB, SaB2----- Salmon	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
SaC, SaC2----- Salmon	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
SaD, SaD2----- Salmon	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
SaE2----- Salmon	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
SdC*: Salmon Variant----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Salmon-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
SdD*: Salmon Variant----	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Salmon-----	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
SdE*: Salmon Variant----	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
Salmon-----	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
SeD----- Scantic Variant	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
SeE----- Scantic Variant	Very poor.	Poor	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
Sr----- Searsport	Very poor.	Poor	Poor	Poor	Poor	Good	Fair	Poor	Poor	Fair.
StC*: Stratton-----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Londonderry-----	Very poor.	Very poor.	Fair	Poor	Poor	Very poor.	Very poor.	Very poor.	Poor	Very poor.
SwA----- Swanville	Poor	Fair	Fair	Fair	Fair	Good	Poor	Fair	Fair	Fair.
Te----- Teel	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
TuB*, TuC*: Tunbridge-----	Fair	Good	Good	Fair	Fair	Very poor.	Very poor.	Good	Fair	Very poor.
Lyman-----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
TuD*: Tunbridge-----	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Lyman-----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
TuE*: Tunbridge-----	Very poor.	Poor	Good	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
Lyman-----	Very poor.	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Ud*. Udifluents										
WAA----- Walpole	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Fair.

\* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 10.--BUILDING SITE DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
AdB----- Adams	Severe: cutbanks cave.	Slight-----	Slight-----	Moderate: slope.	Slight-----	Severe: droughty.
AdC----- Adams	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: droughty.
AdD, AdE----- Adams	Severe: slope, cutbanks cave.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, droughty.
AeC*: Adams-----	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: droughty.
Adams Variant----	Severe: depth to rock, cutbanks cave.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: slope, depth to rock.	Severe: droughty.
AeD*, AeE*: Adams-----	Severe: slope, cutbanks cave.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, droughty.
Adams Variant----	Severe: slope, depth to rock, cutbanks cave.	Severe: slope.	Severe: slope, depth to rock.	Severe: slope.	Severe: slope.	Severe: slope, droughty.
AgB----- Allagash	Severe: cutbanks cave.	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
BeB----- Berkshire	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: frost action, low strength.	Slight.
BeC----- Berkshire	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action, low strength.	Moderate: slope.
BeD----- Berkshire	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
BkB----- Berkshire	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: frost action, low strength.	Moderate: large stones.
BkC----- Berkshire	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action, low strength.	Moderate: slope, large stones.
BkD----- Berkshire	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
BrB*: Berkshire-----	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: frost action, low strength.	Slight.
Tunbridge-----	Severe: depth to rock.	Moderate: depth to rock.	Severe: depth to rock.	Moderate: slope, depth to rock.	Moderate: frost action, depth to rock.	Moderate: thin layer.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
BrC*:						
Berkshire-----	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action, low strength.	Moderate: slope.
Tunbridge-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: slope, depth to rock, frost action.	Moderate: slope, thin layer.
BrD*:						
Berkshire-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Tunbridge-----	Severe: slope, depth to rock.	Severe: slope.	Severe: slope, depth to rock.	Severe: slope.	Severe: slope.	Severe: slope.
BtE*:						
Berkshire-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Marlow-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
BuB-----	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, frost action.	Moderate: wetness.
Boothbay						
BuC-----	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, slope.	Severe: low strength, frost action.	Moderate: wetness, slope.
Boothbay						
BuD-----	Severe: wetness, slope.	Severe: wetness, slope.	Severe: wetness, slope.	Severe: wetness, slope.	Severe: low strength, slope, frost action.	Severe: slope.
Boothbay						
Bx*, By*, Borochemists						
CoB*:						
Colton-----	Severe: cutbanks cave.	Slight-----	Slight-----	Moderate: slope.	Slight-----	Severe: droughty.
Duxbury-----	Severe: cutbanks cave.	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
CoC*:						
Colton-----	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: droughty.
Duxbury-----	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
CoD*, CoE*:						
Colton-----	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
Duxbury-----	Severe: slope, cutbanks cave.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
CrB-----	Severe: wetness, cutbanks cave.	Moderate: wetness.	Severe: wetness.	Moderate: slope, wetness.	Moderate: frost action, wetness.	Severe: droughty.
Croghan						

See footnote at end of table.



TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
FrB*: Fragiaquepts.  Haplaquepts.						
Ha----- Hamlin	Moderate: wetness, floods.	Severe: floods.	Severe: floods.	Severe: floods.	Severe: floods, frost action.	Moderate: floods.
Hs*. Histic Fluvaquents						
Le----- Limerick Variant	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.
LoE*: Londonderry-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, thin layer.
Stratton-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, thin layer.
LyB*: Lyman-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: thin layer, droughty.
Tunbridge-----	Severe: depth to rock.	Moderate: depth to rock.	Severe: depth to rock.	Moderate: slope, depth to rock.	Moderate: frost action, depth to rock.	Moderate: thin layer.
LyC*: Lyman-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: thin layer, droughty.
Tunbridge-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: slope, depth to rock, frost action.	Moderate: slope, thin layer.
LyD*, LyE*: Lyman-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, thin layer, droughty.
Tunbridge-----	Severe: slope, depth to rock.	Severe: slope.	Severe: slope, depth to rock.	Severe: slope.	Severe: slope.	Severe: slope.
MaB----- Marlow	Moderate: dense layer, wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, slope.	Moderate: wetness, frost action.	Slight.
MaC----- Marlow	Moderate: dense layer, wetness, slope.	Moderate: wetness, slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: wetness, slope, frost action.	Moderate: slope.
MaD----- Marlow	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
MrB----- Marlow	Moderate: dense layer, wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, slope.	Moderate: wetness, frost action.	Moderate: large stones.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
MrC----- Marlow	Moderate: dense layer, wetness, slope.	Moderate: wetness, slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: wetness, slope, frost action.	Moderate: large stones, slope.
MrD----- Marlow	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
On----- Ondawa	Severe: cutbanks cave.	Severe: floods.	Severe: floods.	Severe: floods.	Severe: floods.	Moderate: floods.
PaA----- Peacham	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, frost action.	Severe: wetness, excess humus.
PeB----- Peru	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness, slope.	Severe: frost action.	Moderate: wetness.
PeC----- Peru	Severe: wetness.	Moderate: wetness, slope.	Severe: wetness.	Severe: slope.	Severe: frost action.	Moderate: wetness, slope.
PeD----- Peru	Severe: wetness, slope.	Severe: slope.	Severe: wetness, slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
PfB----- Peru	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness, slope.	Severe: frost action.	Moderate: large stones, wetness.
PfC----- Peru	Severe: wetness.	Moderate: wetness, slope.	Severe: wetness.	Severe: slope.	Severe: frost action.	Moderate: large stones, wetness, slope.
PfD----- Peru	Severe: wetness, slope.	Severe: slope.	Severe: wetness, slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
Po----- Podunk	Severe: cutbanks cave, wetness.	Severe: floods.	Severe: floods, wetness.	Severe: floods.	Severe: floods, frost action.	Severe: floods.
PtB----- Potsdam	Moderate: dense layer, wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, slope.	Moderate: wetness, frost action.	Moderate: wetness.
PtC----- Potsdam	Moderate: dense layer, wetness, slope.	Moderate: wetness, slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: wetness, slope, frost action.	Moderate: wetness, slope.
PtD----- Potsdam	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
RkE----- Ricker	Severe: depth to rock, excess humus, slope.	Severe: low strength, slope, depth to rock.	Severe: depth to rock, slope, low strength.	Severe: low strength, slope, depth to rock.	Severe: depth to rock, slope.	Severe: slope, thin layer, excess humus.
Ru----- Rumney	Severe: wetness, cutbanks cave.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness, frost action.	Severe: floods, wetness.
SaB, SaB2----- Salmon	Slight-----	Slight-----	Slight-----	Moderate: slope.	Severe: frost action.	Slight.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
SaC, SaC2----- Salmon	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: frost action.	Moderate: slope.
SaD, SaD2, SaE2--- Salmon	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
SdC*: Salmon Variant---	Severe: depth to rock.	Moderate: depth to rock, slope.	Severe: depth to rock.	Severe: slope.	Moderate: slope, depth to rock.	Moderate: slope, thin layer.
Salmon-----	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: frost action.	Moderate: slope.
SdD*, SdE*: Salmon Variant---	Severe: slope, depth to rock.	Severe: slope.	Severe: slope, depth to rock.	Severe: slope.	Severe: slope.	Severe: slope.
Salmon-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, frost action.	Severe: slope.
SeD, SeE----- Scantic Variant	Severe: slope, wetness.	Severe: slope, wetness.	Severe: slope, wetness.	Severe: slope, wetness.	Severe: slope, wetness, frost action.	Severe: slope, too clayey, wetness.
Sr----- Searsport	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, excess humus.
StC*: Stratton-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, thin layer.
Londonderry-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, thin layer.
SwA----- Swanville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, frost action, low strength.	Severe: wetness.
Te----- Teel	Severe: wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: frost action, wetness, floods.	Severe: wetness.
TuB*: Tunbridge-----	Severe: depth to rock.	Moderate: depth to rock.	Severe: depth to rock.	Moderate: slope, depth to rock.	Moderate: frost action, depth to rock.	Moderate: thin layer.
Lyman-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: thin layer, droughty.
TuC*: Tunbridge-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: slope, depth to rock, frost action.	Moderate: slope, thin layer.
Lyman-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: thin layer, droughty.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
TuD*, TuE*: Tunbridge-----	Severe: slope, depth to rock.	Severe: slope.	Severe: slope, depth to rock.	Severe: slope.	Severe: slope.	Severe: slope.
Lyman-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, thin layer, droughty.
Ud*. Udifluvents						
WaA----- Walpole	Severe: wetness, cutbanks cave.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, frost action.	Severe: wetness.

\* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 11.--SANITARY FACILITIES

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
AdB----- Adams	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
AdC----- Adams	Severe: poor filter.	Severe: slope, seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
AdD, AdE----- Adams	Severe: poor filter, slope.	Severe: slope, seepage.	Severe: slope, seepage, too sandy.	Severe: slope, seepage.	Poor: seepage, too sandy, slope.
AeC*: Adams-----	Severe: poor filter.	Severe: slope, seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
Adams Variant-----	Severe: depth to rock, poor filter.	Severe: slope, seepage, depth to rock.	Severe: seepage, too sandy, depth to rock.	Severe: seepage.	Poor: depth to rock, seepage, too sandy.
AeD*, AeE*: Adams-----	Severe: poor filter, slope.	Severe: slope, seepage.	Severe: slope, seepage, too sandy.	Severe: slope, seepage.	Poor: seepage, too sandy, slope.
Adams Variant-----	Severe: slope, depth to rock, poor filter.	Severe: slope, seepage, depth to rock.	Severe: slope, seepage, too sandy.	Severe: seepage, slope.	Poor: slope, depth to rock, seepage.
AgB----- Allagash	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
BeB----- Berkshire	Slight-----	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: small stones.
BeC----- Berkshire	Moderate: slope.	Severe: slope, seepage.	Severe: seepage.	Severe: seepage.	Fair: slope, small stones.
BeD----- Berkshire	Severe: slope.	Severe: slope, seepage.	Severe: seepage.	Severe: slope, seepage.	Poor: slope.
BkB----- Berkshire	Slight-----	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: small stones.
BkC----- Berkshire	Moderate: slope.	Severe: slope, seepage.	Severe: seepage.	Severe: seepage.	Fair: slope, small stones.
BkD----- Berkshire	Severe: slope.	Severe: slope, seepage.	Severe: seepage.	Severe: slope, seepage.	Poor: slope.
BrB*: Berkshire-----	Slight-----	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: small stones.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
BrB*: Tunbridge-----	Severe: depth to rock.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: area reclaim, thin layer.
BrC*: Berkshire-----	Moderate: slope.	Severe: slope, seepage.	Severe: seepage.	Severe: seepage.	Fair: slope, small stones.
Tunbridge-----	Severe: depth to rock.	Severe: slope, depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: area reclaim, thin layer.
BrD*: Berkshire-----	Severe: slope.	Severe: slope, seepage.	Severe: seepage.	Severe: slope, seepage.	Poor: slope.
Tunbridge-----	Severe: slope, depth to rock.	Severe: slope, depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage, slope.	Poor: area reclaim, thin layer, slope.
BtE*: Berkshire-----	Severe: slope.	Severe: slope, seepage.	Severe: slope, seepage.	Severe: slope, seepage.	Poor: slope.
Marlow-----	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
BuB----- Boothbay	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
BuC----- Boothbay	Severe: wetness, percs slowly.	Severe: slope, wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
BuD----- Boothbay	Severe: wetness, slope, percs slowly.	Severe: slope, wetness.	Severe: wetness, slope.	Severe: wetness, slope.	Poor: slope, wetness.
Bx*, By*. Borohemists					
CoB*: Colton-----	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy, small stones.
Duxbury-----	Severe: poor filter.	Severe: seepage.	Severe: seepage.	Severe: seepage.	Poor: thin layer, too sandy.
CoC*: Colton-----	Severe: poor filter.	Severe: slope, seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy, small stones.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
CoC*: Duxbury-----	Severe: poor filter.	Severe: slope, seepage.	Severe: seepage.	Severe: seepage.	Poor: thin layer, too sandy.
CoD*, CoE*: Colton-----	Severe: poor filter, slope.	Severe: slope, seepage.	Severe: slope, seepage, too sandy.	Severe: slope, seepage.	Poor: seepage, too sandy, small stones.
Duxbury-----	Severe: slope, poor filter.	Severe: slope, seepage.	Severe: slope, seepage.	Severe: slope, seepage.	Poor: slope, thin layer, too sandy.
CrB----- Croghan	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: too sandy, seepage.
FrB*: Fraglaquepts. Haplaquepts.					
Ha----- Hamlin	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Fair: wetness.
Hs*. Histic Fluvaquents					
Le----- Limerick Variant	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Poor: wetness.
LoE*: Londonderry-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Poor: slope, thin layer, area reclaim.
Stratton-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Poor: slope, depth to rock.
LyB*: Lyman-----	Severe: depth to rock.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: seepage, depth to rock.	Poor: thin layer, area reclaim, small stones.
Tunbridge-----	Severe: depth to rock.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: area reclaim, thin layer.
LyC*: Lyman-----	Severe: depth to rock.	Severe: slope, depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: seepage, depth to rock.	Poor: thin layer, area reclaim, small stones.
Tunbridge-----	Severe: depth to rock.	Severe: slope, depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: area reclaim, thin layer.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
LyD*: Lyman-----	Severe: slope, depth to rock.	Severe: slope, depth to rock, seepage.	Severe: slope, depth to rock, seepage.	Severe: slope, seepage, depth to rock.	Poor: slope, thin layer, small stones.
Tunbridge-----	Severe: slope, depth to rock.	Severe: slope, depth to rock, seepage.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: area reclaim, thin layer, slope.
LyE*: Lyman-----	Severe: slope, depth to rock.	Severe: slope, depth to rock, seepage.	Severe: slope, depth to rock, seepage.	Severe: slope, seepage, depth to rock.	Poor: slope, thin layer, small stones.
Tunbridge-----	Severe: slope, depth to rock.	Severe: slope, depth to rock, seepage.	Severe: slope, depth to rock, seepage.	Severe: depth to rock, seepage, slope.	Poor: area reclaim, thin layer, slope.
MaB----- Marlow	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Moderate: wetness.	Moderate: wetness.	Fair: small stones, wetness.
MaC----- Marlow	Severe: wetness, percs slowly.	Severe: slope.	Moderate: wetness, slope.	Moderate: wetness, slope.	Fair: small stones, slope, wetness.
MaD----- Marlow	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
MrB----- Marlow	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Moderate: wetness.	Moderate: wetness.	Fair: small stones, wetness.
MrC----- Marlow	Severe: wetness, percs slowly.	Severe: slope.	Moderate: wetness, slope.	Moderate: wetness, slope.	Fair: small stones, slope, wetness.
MrD----- Marlow	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
On----- Ondawa	Severe: floods, poor filter.	Severe: floods, seepage.	Severe: floods, seepage, too sandy.	Severe: floods, seepage.	Poor: seepage, too sandy.
PaA----- Peacham	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness.	Severe: wetness.	Poor: wetness.
PeB----- Peru	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Severe: wetness.	Moderate: wetness.	Fair: small stones, wetness.
PeC----- Peru	Severe: wetness, percs slowly.	Severe: slope.	Severe: wetness.	Moderate: wetness, slope.	Fair: small stones, slope, wetness.

See footnote at end of table.



TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
PeD----- Peru	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: wetness, slope.	Severe: slope.	Poor: slope.
PfB----- Peru	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Severe: wetness.	Moderate: wetness.	Fair: small stones, wetness.
PfC----- Peru	Severe: wetness, percs slowly.	Severe: slope.	Severe: wetness.	Moderate: wetness, slope.	Fair: small stones, wetness, slope.
PfD----- Peru	Severe: wetness, percs slowly, slope.	Severe: slope.	Severe: wetness, slope.	Severe: slope.	Poor: slope.
Po----- Podunk	Severe: floods, wetness, poor filter.	Severe: floods, wetness, seepage.	Severe: floods, wetness, seepage.	Severe: floods, wetness, seepage.	Poor: seepage, too sandy.
PtB----- Potsdam	Severe: percs slowly, wetness.	Moderate: seepage, slope.	Moderate: wetness.	Moderate: wetness.	Fair: small stones, wetness.
PtC----- Potsdam	Severe: percs slowly, wetness.	Severe: slope.	Moderate: wetness, slope.	Moderate: wetness, slope.	Fair: small stones, wetness, slope.
PtD----- Potsdam	Severe: percs slowly, slope, wetness.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
RkE----- Ricker	Severe: depth to rock, slope.	Severe: depth to rock, slope, excess humus.	Severe: depth to rock, slope, excess humus.	Severe: slope, depth to rock.	Poor: area reclaim, slope, excess humus.
Ru----- Rumney	Severe: floods, wetness, poor filter.	Severe: floods, wetness, seepage.	Severe: floods, wetness, seepage.	Severe: floods, wetness, seepage.	Poor: wetness, seepage, too sandy.
SaB, SaB2----- Salmon	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
SaC, SaC2----- Salmon	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
SaD, SaD2, SaE2----- Salmon	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
SdC*: Salmon Variant-----	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Poor: area reclaim, thin layer.
Salmon-----	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
SdD*, SdE*: Salmon Variant-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Poor: slope, area reclaim, thin layer.
Salmon-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
SeD, SeE----- Scantic Variant	Severe: slope, percs slowly, wetness.	Severe: slope, wetness.	Severe: slope, wetness.	Severe: slope, wetness.	Poor: slope, too clayey, wetness.
Sr----- Searsport	Severe: wetness, poor filter.	Severe: seepage, excess humus, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
StC*: Stratton-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Poor: slope, depth to rock.
Londonderry-----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Poor: slope, thin layer, area reclaim.
SwA----- Swanville	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Te----- Teel	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Poor: wetness.
TuB*: Tunbridge-----	Severe: depth to rock.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: area reclaim, thin layer.
Lyman-----	Severe: depth to rock.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: seepage, depth to rock.	Poor: thin layer, area reclaim, small stones.
TuC*: Tunbridge-----	Severe: depth to rock.	Severe: slope, depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: area reclaim, thin layer.
Lyman-----	Severe: depth to rock.	Severe: slope, depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: seepage, depth to rock.	Poor: thin layer, area reclaim, small stones.
TuD*: Tunbridge-----	Severe: slope, depth to rock.	Severe: slope, depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage, slope.	Poor: area reclaim, thin layer, slope.
Lyman-----	Severe: slope, depth to rock.	Severe: slope, depth to rock, seepage.	Severe: slope, depth to rock, seepage.	Severe: slope, seepage, depth to rock.	Poor: slope, thin layer, small stones.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
TuE*: Tunbridge-----	Severe: slope, depth to rock.	Severe: slope, depth to rock, seepage.	Severe: slope, depth to rock, seepage.	Severe: depth to rock, seepage, slope.	Poor: area reclaim, thin layer, slope.
Lyman-----	Severe: slope, depth to rock.	Severe: slope, depth to rock, seepage.	Severe: slope, depth to rock, seepage.	Severe: slope, seepage, depth to rock.	Poor: slope, thin layer, small stones.
Ud*. Udifluvents					
WaA----- Walpole	Severe: wetness, poor filter.	Severe: wetness, seepage.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: wetness, seepage, too sandy.

\* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 12.--CONSTRUCTION MATERIALS

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," "poor," "probable," and "improbable." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
AdB, AdC----- Adams	Good-----	Probable-----	Improbable: too sandy.	Poor: too sandy.
AdD----- Adams	Fair: slope.	Probable-----	Improbable: too sandy.	Poor: slope, too sandy.
AdE----- Adams	Poor: slope.	Probable-----	Improbable: too sandy.	Poor: slope, too sandy.
AeC*: Adams-----	Good-----	Probable-----	Improbable: too sandy.	Poor: too sandy.
Adams Variant-----	Poor: area reclaim.	Improbable: thin layer.	Improbable: too sandy, thin layer.	Fair: thin layer, area reclaim, too sandy.
AeD*: Adams-----	Fair: slope.	Probable-----	Improbable: too sandy.	Poor: slope, too sandy.
Adams Variant-----	Poor: area reclaim.	Improbable: thin layer.	Improbable: too sandy, thin layer.	Fair: thin layer, area reclaim, too sandy.
AeE*: Adams-----	Poor: slope.	Probable-----	Improbable: too sandy.	Poor: slope, too sandy.
Adams Variant-----	Poor: slope, area reclaim.	Improbable: thin layer.	Improbable: too sandy, thin layer.	Fair: thin layer, area reclaim, too sandy.
AgB----- Allagash	Good-----	Probable-----	Improbable: too sandy.	Fair: thin layer.
BeB, BeC----- Berkshire	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
BeD----- Berkshire	Fair: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
BkB, BkC----- Berkshire	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: large stones.
BkD----- Berkshire	Fair: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: large stones, slope.
BrB*: Berkshire-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
BrB*: Tunbridge-----	Poor: thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, small stones.
BrC*: Berkshire-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
Tunbridge-----	Poor: thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope, area reclaim, small stones.
BrD*: Berkshire-----	Fair: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Tunbridge-----	Poor: thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
BtE*: Berkshire-----	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: large stones, slope.
Marlow-----	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
BuB----- Boothbay	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
BuC----- Boothbay	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
BuD----- Boothbay	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Bx*, By*. Borohemists				
CoB*, CoC*: Colton-----	Good-----	Probable-----	Probable-----	Poor: small stones, too sandy.
Duxbury-----	Good-----	Probable-----	Probable-----	Fair: small stones, slope, area reclaim.
CoD*: Colton-----	Fair: slope.	Probable-----	Probable-----	Poor: slope, small stones, too sandy.
Duxbury-----	Fair: slope.	Probable-----	Probable-----	Poor: slope.
CoE*: Colton-----	Poor: slope.	Probable-----	Probable-----	Poor: slope, small stones, too sandy.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
CoE*: Duxbury-----	Poor: slope.	Probable-----	Probable-----	Poor: slope.
CrB----- Croghan	Fair: wetness.	Probable-----	Improbable: too sandy.	Poor: too sandy.
FrB*: Fragiaquepts. Haplaquepts.				
Ha----- Hamlin	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
Hs*. Histic Fluvaquents				
Le----- Limerick Variant	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
LoE*: Londonderry-----	Poor: slope, thin layer, area reclaim.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: slope, thin layer, area reclaim.
Stratton-----	Poor: slope, thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, area reclaim, thin layer.
LyB*: Lyman-----	Poor: thin layer, area reclaim.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: thin layer, area reclaim, small stones.
Tunbridge-----	Poor: thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, small stones.
LyC*: Lyman-----	Poor: thin layer, area reclaim.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: thin layer, area reclaim, small stones.
Tunbridge-----	Poor: thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope, area reclaim, small stones.
LyD*: Lyman-----	Poor: thin layer, area reclaim.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: slope, thin layer, small stones.
Tunbridge-----	Poor: thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, area reclaim, small stones.
LyE*: Lyman-----	Poor: slope, thin layer, area reclaim.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: slope, thin layer, small stones.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
LyE*: Tunbridge-----	Poor: slope, thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
MaB, MaC----- Marlow	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
MaD----- Marlow	Fair: wetness, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, small stones.
MrB, MrC----- Marlow	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
MrD----- Marlow	Fair: slope, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
On----- Ondawa	Good-----	Probable-----	Improbable: too sandy.	Fair: thin layer.
PaA----- Peacham	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: large stones, wetness.
PeB, PeC----- Peru	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
PeD----- Peru	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, small stones.
PfB, PfC----- Peru	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
PfD----- Peru	Fair: wetness, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, small stones.
Po----- Podunk	Fair: wetness.	Probable-----	Probable-----	Fair: small stones, thin layer, area reclaim.
PtB----- Potsdam	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, area reclaim.
PtC----- Potsdam	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, area reclaim, slope.
PtD----- Potsdam	Fair: wetness, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
RkE----- Ricker	Poor: area reclaim, thin layer, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim, slope, excess humus.
Ru----- Rumney	Poor: wetness.	Probable-----	Improbable: too sandy.	Poor: wetness, small stones.
SaB, SaB2----- Salmon	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
SaC, SaC2----- Salmon	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
SaD, SaD2----- Salmon	Fair: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
SaE2----- Salmon	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
SdC*: Salmon Variant-----	Poor: thin layer.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Fair: area reclaim, thin layer, slope.
Salmon-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
SdD*: Salmon Variant-----	Poor: thin layer.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: slope.
Salmon-----	Fair: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
SdE*: Salmon Variant-----	Poor: slope, thin layer.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: slope.
Salmon-----	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
SeD----- Scantic Variant	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, too clayey, wetness.
SeE----- Scantic Variant	Poor: slope, low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, too clayey, wetness.
Sr----- Searsport	Poor: wetness.	Probable-----	Improbable: too sandy.	Poor: wetness, excess humus.
StC*: Stratton-----	Poor: thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, area reclaim, thin layer.
Londonderry-----	Poor: thin layer, area reclaim.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: slope, thin layer, area reclaim.
SwA----- Swanville	Poor: wetness, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Te----- Teel	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.

See footnote at end of table.



TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
TuB*: Tunbridge-----	Poor: thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Good. area reclaim, small stones.
Lyman-----	Poor: thin layer, area reclaim.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: thin layer, area reclaim, small stones.
TuC*: Tunbridge-----	Poor: thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope, area reclaim, small stones.
Lyman-----	Poor: thin layer, area reclaim.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: thin layer, area reclaim, small stones.
TuD*: Tunbridge-----	Poor: thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Lyman-----	Poor: thin layer, area reclaim.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: slope, thin layer, small stones.
TuE*: Tunbridge-----	Poor: slope, thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Lyman-----	Poor: slope, thin layer, area reclaim.	Improbable: excess fines, thin layer.	Improbable: excess fines, thin layer.	Poor: slope, thin layer, small stones.
Ud*. Udifluvents				
WaA----- Walpole	Poor: wetness.	Probable-----	Probable-----	Poor: wetness, small stones.

\* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 13.--WATER MANAGEMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated]

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
AdB----- Adams	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Too sandy-----	Droughty.
AdC, AdD, AdE----- Adams	Severe: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, too sandy.	Slope, droughty.
AeC*, AeD*, AeE*: Adams-----	Severe: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, too sandy.	Slope, droughty.
Adams Variant-----	Severe: slope, seepage, depth to rock.	Severe: thin layer, seepage, piping.	Severe: no water.	Deep to water, depth to rock.	Slope, too sandy, depth to rock.	Slope, droughty, depth to rock.
AgB----- Allagash	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Too sandy-----	Favorable.
BeB----- Berkshire	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water	Favorable-----	Favorable.
BeC, BeD----- Berkshire	Severe: slope, seepage.	Severe: piping.	Severe: no water.	Deep to water	Slope-----	Slope.
BkB----- Berkshire	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water	Slope, large stones.	Large stones.
BkC, BkD----- Berkshire	Severe: slope, seepage.	Severe: piping.	Severe: no water.	Deep to water	Slope, large stones.	Slope, large stones.
BrB*: Berkshire-----	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water	Favorable-----	Favorable.
Tunbridge-----	Severe: seepage.	Severe: thin layer.	Severe: no water.	Deep to water	Depth to rock	Depth to rock.
BrC*, BrD*: Berkshire-----	Severe: slope, seepage.	Severe: piping.	Severe: no water.	Deep to water	Slope-----	Slope.
Tunbridge-----	Severe: slope, seepage.	Severe: thin layer.	Severe: no water.	Deep to water	Slope, depth to rock.	Slope, depth to rock.
BtE*: Berkshire-----	Severe: slope, seepage.	Severe: piping.	Severe: no water.	Deep to water	Slope, large stones.	Slope, large stones.
Marlow-----	Severe: slope.	Severe: piping.	Severe: no water.	Slope-----	Slope, erodes easily, rooting depth.	Slope, erodes easily, rooting depth.
BuB----- Boothbay	Moderate: slope.	Severe: piping, wetness.	Severe: slow refill.	Percs slowly, frost action, slope.	Erodes easily, wetness, slope.	Wetness, erodes easily, slope.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
BuC, BuD----- Boothbay	Severe: slope.	Severe: piping, wetness.	Severe: slow refill.	Peres slowly, frost action, slope.	Erodes easily, wetness, slope.	Wetness, erodes easily, slope.
Bx*, By*. Borochemists						
CoB*: Colton-----	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water	Large stones, too sandy.	Droughty, large stones.
Duxbury-----	Severe: seepage.	Severe: thin layer, seepage.	Severe: no water.	Deep to water	Favorable-----	Favorable.
CoC*, CoD*, CoE*: Colton-----	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water	Slope, large stones, too sandy.	Slope, droughty, large stones.
Duxbury-----	Severe: seepage, slope.	Severe: thin layer, seepage.	Severe: no water.	Deep to water	Slope-----	Slope.
CrB----- Croghan	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Slope, cutbanks cave.	Wetness, too sandy.	Droughty.
FrB*: Fragiaquepts. Haplaquepts.						
Ha----- Hamlin	Moderate: seepage.	Severe: piping.	Moderate: deep to water, slow refill.	Deep to water	Erodes easily	Erodes easily.
Hs*. Histic Fluvaquents						
Le----- Limerick Variant	Slight-----	Severe: wetness, piping.	Moderate: slow refill.	Floods, frost action.	Wetness-----	Wetness.
LoE*: Londonderry-----	Severe: depth to rock, slope.	Severe: thin layer, excess humus, wetness.	Severe: no water.	Depth to rock, slope.	Depth to rock, slope.	Depth to rock, slope, erodes easily.
Stratton-----	Severe: slope, depth to rock.	Severe: thin layer.	Severe: depth to rock.	Depth to rock	Slope, depth to rock.	Slope, depth to rock, erodes easily.
LyB*: Lyman-----	Severe: depth to rock, seepage.	Severe: thin layer, piping.	Severe: no water.	Deep to water	Depth to rock	Depth to rock, droughty.
Tunbridge-----	Severe: seepage.	Severe: thin layer, piping.	Severe: no water.	Deep to water	Depth to rock	Depth to rock.
LyC*, LyD*, LyE*: Lyman-----	Severe: slope, seepage, depth to rock.	Severe: thin layer, piping.	Severe: no water.	Deep to water	Slope, depth to rock.	Slope, depth to rock, droughty.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
LyC*, LyD*, LyE*: Tunbridge-----	Severe: seepage, slope.	Severe: thin layer, piping.	Severe: no water.	Deep to water	Slope, depth to rock.	Slope, depth to rock.
MaB----- Marlow	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope-----	Erodes easily, rooting depth.	Erodes easily, rooting depth.
MaC, MaD----- Marlow	Severe: slope.	Severe: piping.	Severe: no water.	Slope-----	Slope, erodes easily, rooting depth.	Slope, erodes easily, rooting depth.
MrB----- Marlow	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope-----	Erodes easily, rooting depth.	Erodes easily, rooting depth.
MrC, MrD----- Marlow	Severe: slope.	Severe: piping.	Severe: no water.	Slope-----	Slope, erodes easily, rooting depth.	Slope, erodes easily, rooting depth.
On----- Ondawa	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Too sandy, erodes easily.	Erodes easily.
PaA----- Peacham	Slight-----	Severe: piping, wetness.	Slight-----	Poor outlets, percs slowly, frost action.	Wetness, rooting depth, poor outlets.	Wetness, rooting depth, percs slowly.
PeB----- Peru	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Percs slowly, frost action, slope.	Erodes easily, wetness.	Erodes easily, rooting depth.
PeC, PeD----- Peru	Severe: slope.	Severe: piping.	Severe: no water.	Percs slowly, frost action, slope.	Slope, erodes easily, wetness.	Slope, erodes easily, rooting depth.
PfB----- Peru	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Percs slowly, frost action, slope.	Erodes easily, wetness.	Erodes easily.
PfC, PfD----- Peru	Severe: slope.	Severe: piping.	Severe: no water.	Percs slowly, frost action, slope.	Slope, erodes easily, wetness.	Slope, erodes easily.
Po----- Podunk	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Frost action, floods, cutbanks cave.	Wetness, too sandy, erodes easily.	Erodes easily.
PtB----- Potsdam	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Percs slowly, slope.	Erodes easily, rooting depth, percs slowly.	Erodes easily, rooting depth, percs slowly.
PtC, PtD----- Potsdam	Severe: slope.	Severe: piping.	Severe: no water.	Percs slowly, slope.	Slope, erodes easily, rooting depth.	Slope, erodes easily, rooting depth.
RkE----- Ricker	Severe: depth to rock, slope.	Severe: thin layer, excess humus.	Severe: no water.	Depth to rock, too acid, slope.	Slope, depth to rock.	Slope, depth to rock.
Ru----- Rumney	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Frost action, floods, cutbanks cave.	Wetness, too sandy, erodes easily.	Wetness, erodes easily.
SaB, SaB2----- Salmon	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily	Erodes easily.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
SaC, SaC2, SaD, SaD2, SaE2----- Salmon	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.
SdC*, SdD*, SdE*: Salmon Variant---	Severe: slope.	Severe: thin layer.	Severe: no water.	Depth to rock, slope.	Depth to rock, slope, erodes easily.	Depth to rock, erodes easily.
Salmon-----	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.
SeD, SeE----- Scantic Variant	Severe: slope.	Severe: wetness.	Severe: slow refill.	Slope, frost action.	Slope, wetness.	Wetness, slope.
Sr----- Searsport	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, too sandy.	Wetness.
StC*: Stratton-----	Severe: slope, depth to rock.	Severe: thin layer.	Severe: depth to rock.	Depth to rock	Slope, depth to rock.	Slope, depth to rock, erodes easily.
Londonderry-----	Severe: depth to rock, slope.	Severe: thin layer, excess humus, wetness.	Severe: no water.	Depth to rock, slope.	Depth to rock, slope.	Depth to rock, slope, erodes easily.
SwA----- Swanville	Slight-----	Severe: piping, wetness.	Severe: slow refill.	Percs slowly, frost action.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, rooting depth.
Te----- Teel	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Floods, frost action.	Erodes easily, wetness.	Wetness, erodes easily.
TuB*: Tunbridge-----	Severe: seepage.	Severe: thin layer, piping.	Severe: no water.	Deep to water	Depth to rock	Depth to rock.
Lyman-----	Severe: depth to rock, seepage.	Severe: thin layer, piping.	Severe: no water.	Deep to water	Depth to rock	Depth to rock, droughty.
TuC*, TuD*, TuE*: Tunbridge-----	Severe: slope, seepage.	Severe: thin layer, piping.	Severe: no water.	Deep to water	Slope, depth to rock.	Slope, depth to rock.
Lyman-----	Severe: slope, seepage, depth to rock.	Severe: thin layer, piping.	Severe: no water.	Deep to water	Slope, depth to rock.	Slope, depth to rock, droughty.
Ud*. Udifluvents						
WaA----- Walpole	Severe: seepage.	Severe: seepage, wetness.	Severe: cutbanks cave.	Frost action, cutbanks cave.	Wetness, too sandy.	Wetness.

\* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 14.--ENGINEERING INDEX PROPERTIES

[The symbol &lt; means less than; &gt; means more than. Absence of an entry indicates that data were not estimated]

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
AdB, AdC, AdD, AdE----- Adams	0-5	Loamy fine sand	SM, SP-SM	A-1, A-2, A-3, A-4	0	95-100	95-100	45-85	5-40	---	NP
	5-26	Loamy sand, sand, loamy fine sand.	SM, SP-SM	A-1, A-2, A-3, A-4	0	95-100	95-100	35-95	5-40	---	NP
	26-60	Sand, coarse sand	SP-SM, SW-SM, SP	A-1, A-2, A-3	0-1	90-100	70-100	20-90	0-10	---	NP
AeC*, AeD*, AeE*: Adams-----	0-5	Loamy fine sand	SM, SP-SM	A-1, A-2, A-3, A-4	0	95-100	95-100	45-85	5-40	---	NP
	5-26	Loamy sand, sand, loamy fine sand.	SM, SP-SM	A-1, A-2, A-3, A-4	0	95-100	95-100	35-95	5-40	---	NP
	26-60	Sand, coarse sand	SP-SM, SW-SM, SP	A-1, A-2, A-3	0-1	90-100	70-100	20-90	0-10	---	NP
Adams Variant---	0-3	Loamy fine sand	SW-SM, SM	A-1, A-2, A-3	0	95-100	95-100	45-85	5-30	---	NP
	3-6	Loamy fine sand, sand.	SW-SM, SM	A-1, A-2, A-3	0	95-100	95-100	45-85	5-30	---	NP
	6-32	Sand-----	SW-SM, SM	A-1, A-2, A-3	0-1	90-100	70-100	40-70	5-15	---	NP
	32	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
AgB----- Allagash	1-0	Fibric material	Pt	A-8	0	---	---	---	---	---	---
	0-7	Very fine sandy loam, silt loam.	SM, ML	A-4, A-5	0	95-100	95-100	65-100	40-90	<44	NP-9
	7-32	Fine sandy loam, loam, silt loam.	SM, ML	A-2, A-4	0	95-100	95-100	65-95	30-75	---	NP
	32-60	Stratified loamy fine sand to very gravelly sand.	SP, SM, SW	A-1, A-2, A-3	0-10	60-80	50-75	25-60	0-30	---	NP
BeB, BeC, BeD---- Berkshire	0-3	Fine sandy loam	SM, ML	A-2, A-4	0-15	80-95	70-90	45-90	20-70	<30	NP-10
	3-23	Fine sandy loam, sandy loam, gravelly loam.	SM, ML	A-2, A-4	0-20	75-95	65-85	40-85	20-65	<30	NP-10
	23-60	Fine sandy loam, sandy loam, gravelly loam.	SM, ML	A-2, A-4	0-20	75-90	65-85	40-80	20-60	<20	NP-6
BkB, BkC, BkD---- Berkshire	0-3	Very stony fine sandy loam.	SM, ML	A-2, A-4	15-25	80-95	70-90	45-90	25-70	<30	NP-10
	3-23	Fine sandy loam, sandy loam, gravelly loam.	SM, ML	A-2, A-4	0-20	75-95	65-85	40-85	20-65	<30	NP-10
	23-60	Fine sandy loam, sandy loam, gravelly loam.	SM, ML	A-2, A-4	0-20	75-90	65-85	40-80	20-60	<20	NP-6
BrB*, BrC*, BrD*: Berkshire-----	0-3	Fine sandy loam	SM, ML	A-2, A-4	0-15	80-95	70-90	45-90	20-70	<30	NP-10
	3-23	Fine sandy loam, sandy loam, gravelly loam.	SM, ML	A-2, A-4	0-20	75-95	65-85	40-85	20-65	<30	NP-10
	23-60	Fine sandy loam, sandy loam, gravelly loam.	SM, ML	A-2, A-4	0-20	75-90	65-85	40-80	20-60	<20	NP-6

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO		4	10	40	200		
	<u>In</u>				<u>Pct</u>					<u>Pct</u>	
BrB*, BrC*, BrD*: Tunbridge-----	0-3	Fine sandy loam	SM, ML	A-4	0	85-100	80-100	60-75	40-70	<20	NP-2
	3-14	Fine sandy loam, loam, silt loam.	SM, ML	A-4, A-5	0	85-100	80-100	60-75	40-70	<50	NP-6
	14-28	Fine sandy loam, loam, gravelly fine sandy loam.	SM, ML	A-2, A-4 A-1, A-5	0-5	80-95	70-90	50-85	25-60	<20	NP-2
	28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
BtE*: Berkshire-----	0-3	Very stony fine sandy loam.	SM, ML	A-2, A-4, A-5	15-25	80-95	70-90	45-90	25-70	<30	NP-10
	3-23	Fine sandy loam, sandy loam, gravelly loam.	SM, ML	A-2, A-4, A-5	0-20	75-95	65-85	40-85	20-65	<30	NP-10
	23-60	Fine sandy loam, sandy loam, gravelly loam.	SM, ML	A-2, A-4	0-20	75-90	65-85	40-80	20-60	<20	NP-6
Marlow-----	0-24	Very stony fine sandy loam.	SM, ML, CL-ML	A-2, A-4	5-15	80-95	75-90	55-85	30-60	<30	NP-10
	24-35	Fine sandy loam, loam, gravelly fine sandy loam.	SM, ML, CL-ML	A-2, A-4	5-15	70-95	60-90	50-85	30-60	<30	NP-10
	35-60	Fine sandy loam, loam, gravelly fine sandy loam.	SM, ML, CL-ML	A-2, A-4	5-15	70-90	60-85	50-80	25-55	<30	NP-10
BuB, BuC, BuD---- Boothbay	0-10	Silt loam-----	ML, CL, CL-ML	A-4, A-6	0	100	95-100	85-100	60-90	20-40	3-15
	10-30	Silt loam, silty clay loam.	ML, CL, CL-ML	A-4, A-6	0	100	95-100	90-100	65-100	20-40	3-15
	30-60	Silty clay loam, silt loam.	ML, CL, CL-ML	A-4, A-6	0	100	95-100	90-100	65-100	20-40	3-15
Bx*, By*. Borochemists											
CoB*, CoC*, CoD*, CoE*: Colton-----	0-4	Loamy sand-----	SM, SW-SM, SP-SM	A-1, A-2, A-3, A-4	0-5	80-90	75-85	40-70	5-45	<10	NP-2
	4-27	Gravelly loamy sand, very gravelly sand, cobbly sand.	SM, GM, SP, GP	A-1	5-20	30-80	25-75	20-50	2-20	---	NP
	27-60	Very gravelly sand, very cobbly sand.	GP, SP, GW, SW	A-1	10-45	20-55	15-50	10-30	0-5	---	NP
Duxbury-----	0-5	Fine sandy loam	SM, ML	A-4, A-2	---	85-100	70-100	40-90	30-55	---	NP
	5-16	Silt loam, fine sandy loam, gravelly fine sandy loam.	SM, ML, MH, CL	A-4, A-5, A-2	---	85-100	70-100	40-85	30-55	<52	NP-10
	16-25	Fine sandy loam, gravelly fine sandy loam, silt loam.	SM	A-2, A-4	---	75-90	70-85	40-70	30-40	<10	NP-10
	25-60	Loamy sand, gravelly sand, very gravelly sand.	GP, GW, GM, SP	A-1, A-2	0-25	40-90	30-85	15-50	0-15	---	NP

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches Pct	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO		4	10	40	200		
CrB----- Croghan	0-8	Loamy fine sand	SM, SP-SM, SW-SM	A-1, A-3, A-4, A-2	0	95-100	95-100	45-80	5-40	---	NP
	8-28	Sand, loamy sand, loamy fine sand.	SM, SP-SM, SW-SM	A-1, A-2, A-3, A-4	0	90-100	85-100	45-80	5-40	---	NP
	28-60	Sand, loamy sand	SM, SP-SM, SW-SM	A-1, A-2, A-3	0	90-100	85-100	45-75	5-30	---	NP
FrB*: Fraglaquepts. Haplaquepts.											
Ha----- Hamlin	0-7	Silt loam-----	ML, CL-ML, CL	A-4, A-6	0	100	95-100	90-100	60-90	15-35	2-15
	7-16	Silt loam, very fine sandy loam.	ML, CL-ML, CL	A-4, A-6	0	100	95-100	90-100	60-90	15-35	2-15
	16-60	Silt loam, very fine sandy loam.	ML, CL-ML, CL	A-4, A-6	0	100	95-100	90-100	60-90	15-35	2-15
Hs*. Histic Fluvaquents											
Le----- Limerick Variant	0-8	Silt loam-----	ML	A-4	0	100	100	95-100	85-95	---	NP
	8-32	Silt loam-----	ML	A-4	0	100	100	95-100	85-95	---	NP
	32-60	Silt loam-----	ML	A-4	0	100	100	95-100	85-95	---	NP
LoE*: Londonderry-----	4-0	Fibric material	Pt	A-8	---	---	---	---	---	---	---
	0-5	Silt loam-----	ML	A-4	0	90-100	85-95	70-95	55-85	<40	NP-10
	5	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Stratton-----	0-4	Very channery silt loam.	ML, SM,	A-2, A-3, A-4	0-30	43-94	22-87	15-68	7-55	---	NP
	4-15	Gravelly fine sandy loam, cobbly loam, very channery silt loam.	GM, SM, ML, MH	A-1, A-2, A-5	0-70	23-99	19-98	18-80	16-54	<56	NP-10
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
LyB*, LyC*, LyD*, LyE*: Lyman-----	0-2	Fine sandy loam	ML, SM	A-4, A-1, A-2	0-15	80-95	70-90	40-85	20-80	<35	NP-6
	2-12	Loam, channery fine sandy loam, silt loam.	SM, ML	A-2, A-4, A-1	0-20	65-95	60-90	35-85	20-80	<30	NP-4
	12	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Tunbridge-----	0-3	Fine sandy loam	SM, ML	A-4	0	85-100	80-100	60-75	40-70	<20	NP-2
	3-14	Fine sandy loam, loam, silt loam	SM, ML	A-4, A-5	0	85-100	80-100	60-75	40-70	<50	NP-6
	14-28	Fine sandy loam, loam, gravelly fine sandy loam.	SM, ML	A-2, A-4 A-1, A-5	0-5	80-95	70-90	50-85	25-60	<20	NP-2
	28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---

See footnote at end of table.



TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
MaB, MaC, MaD--- Marlow	0-24	Fine sandy loam	SM, ML, CL-ML	A-2, A-4	0-5	80-95	75-90	55-85	30-60	<30	NP-10
	24-35	Fine sandy loam, loam, gravelly sandy loam.	SM, ML, CL-ML,	A-2, A-4	0-15	70-95	60-90	50-85	30-60	<30	NP-10
	35-60	Fine sandy loam, loam, gravelly sandy loam.	SM, ML, CL-ML,	A-2, A-4	0-15	70-90	60-85	50-80	25-55	<30	NP-10
MrB, MrC, MrD--- Marlow	0-24	Very stony fine sandy loam.	SM, ML, CL-ML	A-2, A-4	5-15	80-95	75-90	55-85	30-60	<30	NP-10
	24-35	Fine sandy loam, loam, gravelly fine sandy loam.	SM, ML, CL-ML, CL-ML	A-2, A-4	5-15	70-95	60-90	50-85	30-60	<30	NP-10
	35-60	Fine sandy loam, loam, gravelly fine sandy loam.	SM, ML, CL-ML,	A-2, A-4	5-15	70-90	60-85	50-80	25-55	<30	NP-10
On----- Ondawa	0-6	Fine sandy loam	SM, ML	A-2, A-4	0	100	100	60-100	30-60	---	NP
	6-40	Fine sandy loam, sandy loam, loam.	SM, ML	A-2, A-4	0	100	100	80-95	20-70	---	NP
	40-60	Stratified loamy fine sand to sand.	SP, SM	A-2, A-3	0	90-100	75-100	70-90	0-35	---	NP
PaA----- Peacham	7-0	Very stony muck	Pt	A-8	5-20	---	---	---	---	---	---
	0-6	Loam, silt loam, gravelly fine sandy loam.	SM, ML	A-2, A-4	5-15	75-100	65-95	50-95	30-85	---	NP
	6-60	Loam, silt loam, gravelly fine sandy loam.	SM, ML	A-2, A-4	5-15	75-100	65-95	50-95	30-85	---	NP
PeB, PeC, PeD--- Peru	0-8	Fine sandy loam	SM, ML, CL-ML	A-2, A-4	0-10	80-95	75-90	50-85	25-60	<30	NP-10
	8-28	Fine sandy loam, loam, gravelly sandy loam, silt loam.	SM, ML, SC, SM-SC	A-2, A-4	0-15	75-95	65-90	55-85	30-65	<30	NP-10
	28-60	Fine sandy loam, loam, gravelly sandy loam.	SM, ML, SC, SM-SC	A-2, A-4	0-15	70-90	60-85	55-80	20-60	<30	NP-10
PFB, PFC, PFD--- Peru	0-8	Very stony fine sandy loam.	SM, ML, CL-ML	A-2, A-4	5-15	80-95	75-90	50-85	25-60	<30	NP-10
	8-28	Fine sandy loam, loam, gravelly sandy loam, silt loam.	SM, ML, SC, SM-SC	A-2, A-4	5-15	75-95	65-95	55-85	30-65	<30	NP-10
	28-60	Fine sandy loam, loam, gravelly sandy loam.	SM, ML, SC, SM-SC	A-2, A-4	5-15	70-90	60-85	55-80	20-60	<30	NP-10
Po----- Podunk	0-11	Fine sandy loam	SM, ML	A-2, A-4	0	100	100	60-100	30-90	---	NP
	11-32	Fine sandy loam, sandy loam, loam.	SM, ML	A-2, A-4	0	100	100	60-95	30-75	---	NP
	32-60	Stratified loamy fine sand to gravelly coarse sand.	SP-SM, SM	A-2, A-1, A-3	0	75-100	65-100	35-85	5-25	---	NP

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO		4	10	40	200		
	<u>In</u>				<u>Pct</u>					<u>Pct</u>	
PtB, PtC, PtD---- Potsdam	0-8	Silt loam-----	SM, ML	A-4	0-5	90-100	85-100	65-100	40-80	<15	NP-4
	8-22	Loam, very fine sandy loam, silt loam.	SM, ML	A-4	0-5	90-100	85-100	65-100	40-80	<15	NP-4
	22-60	Sandy loam, gravelly fine sandy loam, gravelly sandy loam.	SM, GM	A-1, A-2, A-4	5-10	55-90	50-85	30-75	15-50	<15	NP-4
RkE----- Ricker	0-4	Fibric material	Pt	A-8	---	---	---	---	---	---	---
	4-7	Sapric material, hemic material.	Pt	A-8	---	---	---	---	---	---	---
	7-9	Channery coarse sand, fine sandy loam.	SM, ML	A-1, A-2, A-4	0-5	60-100	40-95	35-95	15-85	---	NP
	9	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Ru----- Rumney	0-10	Fine sandy loam	SM, ML	A-2, A-4	0	100	85-100	50-85	25-55	---	NP
	10-35	Fine sandy loam, sandy loam, loam.	SM, ML	A-2, A-4	0	100	85-100	50-95	25-75	---	NP
	35-60	Stratified silt to gravelly sand.	SM, SP-SM	A-1, A-2, A-3	0	80-100	45-95	25-70	5-30	---	NP
SaB, SaB2, SaC, SaC2, SaD, SaD2, SaE2----- Salmon	0-7	Very fine sandy loam.	ML, CL-ML	A-4	0	100	95-100	90-100	70-95	20-40	2-12
	7-26	Very fine sandy loam, silt loam.	ML, CL-ML	A-4	0	100	95-100	90-100	70-95	<25	NP-5
	26-60	Very fine sandy loam, silt loam.	ML, CL-ML	A-4	0	100	95-100	90-100	70-95	<25	NP-5
SdC*, SdD*, SdE*: Salmon Variant--	0-4	Very fine sandy loam.	ML, CL-ML	A-4	0	100	95-100	80-100	60-90	<25	NP-5
	4-22	Very fine sandy loam, silt loam.	ML, CL-ML	A-4	0	100	95-100	80-100	60-90	<25	NP-5
	22-30	Very fine sandy loam, silt loam.	ML, CL-ML	A-4	0	100	95-100	80-100	55-90	<25	NP-5
	30	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Salmon-----	0-7	Very fine sandy loam.	ML, CL-ML	A-4	0	100	95-100	90-100	70-95	20-40	2-12
	7-26	Very fine sandy loam, silt loam.	ML, CL-ML	A-4	0	100	95-100	90-100	70-95	<25	NP-5
	26-60	Very fine sandy loam, silt loam.	ML, CL-ML	A-4	0	100	95-100	90-100	70-95	<25	NP-5
SeD, SeE----- Scantic Variant	0-9	Bouldery silt loam.	ML, CL, MH	A-4	0	100	100	85-100	60-90	36-51	5-10
	9-13	Silty clay-----	ML, CL, MH	A-6, A-7, A-4	0	100	100	95-100	80-90	36-51	10-20
	13-58	Silty clay-----	ML, CL, MH	A-6, A-7, A-4	0	100	100	95-100	80-95	36-51	10-20
	58-64	Silty clay-----	ML, CL, MH	A-6, A-7, A-4	0	100	100	95-100	80-95	36-51	10-20
Sr----- Searsport	14-0	Muck-----	Pt	A-8	0	---	---	---	---	---	---
	0-60	Loamy sand, coarse sand, fine sand.	SM, SP	A-1, A-2, A-3	0	95-100	85-100	40-100	0-35	---	NP

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 3 inches Pct	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO		4	10	40	200		
StC*: Stratton-----	In										
	0-4	Very channery silt loam.	ML, SM,	A-2, A-3, A-4	0-30	43-94	22-87	15-68	7-55	---	NP
	4-15	Gravelly fine sandy loam, cobbly loam, very channery silt loam.	GM, SM, ML, MH	A-1, A-2, A-5	0-70	23-99	19-98	18-80	16-54	<56	NP-10
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Londonderry----	4-0	Fibric material	Pt	A-8	---	---	---	---	---	---	---
	0-5	Silt loam-----	ML	A-4	0	90-100	85-95	70-95	55-85	<40	NP-10
	5	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
SwA----- Swanville	0-6	Silt loam-----	ML, CL, CL-ML	A-4, A-6	0	100	95-100	85-100	60-90	20-40	3-15
	6-33	Silt loam, silty clay loam.	ML, CL, CL-ML	A-4, A-6	0	100	95-100	90-100	65-100	20-40	3-15
	33-60	Silt loam, silty clay loam.	ML, CL, CL-ML	A-4, A-6	0	100	95-100	90-100	65-100	20-40	3-15
Te----- Teel	0-15	Silt loam-----	ML, CL-ML, CL	A-4, A-6	0	100	95-100	90-100	70-90	15-35	2-15
	15-43	Silt loam, very fine sandy loam.	ML, CL-ML, CL	A-4, A-6	0	100	95-100	90-100	65-90	15-35	2-15
	43-60	Silt loam, fine sandy loam, gravelly very fine sandy loam.	ML, SM, CL, SM-SC	A-4, A-6, A-2	0-5	75-100	70-100	50-100	30-90	<25	NP-15
TuB*, TuC*, TuD*, TuE*: Tunbridge-----	0-3	Fine sandy loam	SM, ML	A-4	0	85-100	80-100	60-75	40-70	<20	NP-2
	3-14	Fine sandy loam, loam, silt loam.	SM, ML	A-4, A-5	0	85-100	80-100	60-75	40-70	<50	NP-6
	14-28	Fine sandy loam, loam, gravelly fine sandy loam.	SM, ML	A-2, A-4, A-1, A-5	0	80-95	70-90	50-85	25-60	<20	NP-2
	28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Lyman-----	0-2	Fine sandy loam	ML, SM	A-4, A-1, A-2	0-15	80-95	70-90	40-85	20-80	<35	NP-6
	2-12	Loam, channery fine sandy loam, silt loam.	SM, ML	A-2, A-4, A-1	0-20	65-95	60-90	35-85	20-80	<30	NP-4
	12	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Ud*. Udifluvents											
WaA----- Walpole	0-4	Fine sandy loam	SM	A-2, A-4	0-5	90-100	85-100	70-100	30-50	<25	NP-3
	4-11	Fine sandy loam, sandy loam, gravelly sandy loam.	SM	A-2, A-4	0-5	85-100	60-100	40-95	25-50	---	NP
	11-60	Gravelly loamy sand, gravelly sand, coarse sand.	SP, SM	A-1, A-2, A-3	0-20	55-100	50-100	25-90	0-25	---	NP

\* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

[The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated]

Soil name and map symbol	Depth	Clay <2mm	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cm <sup>3</sup>	In/hr	In/in	pH				Pct
AdB, AdC, AdD, AdE-----	0-5	0-5	1.00-1.30	6.0-20	0.05-0.15	4.5-5.5	Low-----	0.17	5	1-4
Adams	5-26	0-5	1.10-1.45	6.0-20	0.04-0.09	4.5-5.5	Low-----	0.17		
	26-60	0-5	1.20-1.50	>20	0.03-0.04	4.5-6.0	Low-----	0.17		
AeC*, AeD*, AeE*:										
Adams-----	0-5	0-5	1.00-1.30	6.0-20	0.05-0.15	4.5-5.5	Low-----	0.17	5	1-4
	5-26	0-5	1.10-1.45	6.0-20	0.04-0.09	4.5-5.5	Low-----	0.17		
	26-60	0-5	1.20-1.50	>20	0.03-0.04	4.5-6.0	Low-----	0.17		
Adams Variant---	0-3	0-5	1.00-1.30	6.0-20	0.05-0.15	4.5-5.5	Low-----	0.17	3	1-4
	3-6	0-5	1.10-1.45	6.0-20	0.04-0.09	4.5-5.5	Low-----	0.17		
	6-32	0-5	1.20-1.50	>20	0.03-0.04	4.5-6.0	Low-----	0.17		
	32	---	---	---	---	---	-----	---		
AgB-----	1-0	---	<0.30	2.0-6.0	0.20-0.40	3.6-4.4	-----	---	---	---
Allagash	0-7	3-13	0.95-1.25	2.0-6.0	0.16-0.22	4.5-6.5	Low-----	0.28	3	3-8
	7-32	2-12	1.20-1.50	2.0-6.0	0.10-0.24	4.5-6.5	Low-----	0.28		
	32-60	1-4	1.40-1.70	6.0-20	0.01-0.10	4.5-6.5	Low-----	0.28		
BeB, BeC, BeD----	0-3	3-10	1.10-1.15	0.6-6.0	0.10-0.22	3.6-6.0	Low-----	0.24	3	2-5
Berkshire	3-23	3-10	1.15-1.30	0.6-6.0	0.10-0.20	3.6-6.0	Low-----	0.24		
	23-60	1-10	1.30-1.60	0.6-6.0	0.10-0.18	3.6-6.0	Low-----	0.20		
BkB, BkC, BkD----	0-3	3-10	1.10-1.15	0.6-6.0	0.06-0.22	3.6-6.0	Low-----	0.20	3	2-5
Berkshire	3-23	3-10	1.15-1.30	0.6-6.0	0.10-0.20	3.6-6.0	Low-----	0.24		
	23-60	1-10	1.30-1.60	0.6-6.0	0.10-0.18	3.6-6.0	Low-----	0.20		
BrB*, BrC*, BrD*:										
Berkshire-----	0-3	3-10	1.10-1.15	0.6-6.0	0.10-0.22	3.6-6.0	Low-----	0.24	3	2-5
	3-23	3-10	1.15-1.30	0.6-6.0	0.10-0.20	3.6-6.0	Low-----	0.24		
	23-60	1-10	1.30-1.60	0.6-6.0	0.10-0.18	3.6-6.0	Low-----	0.20		
Tunbridge-----	0-3	5-9	0.80-1.20	2.0-6.0	0.12-0.18	3.6-5.5	Low-----	0.20	2	3-6
	3-14	3-9	1.20-1.40	2.0-6.0	0.10-0.16	3.6-6.0	Low-----	0.20		
	14-28	3-7	1.20-1.50	0.6-6.0	0.10-0.14	3.6-6.5	Low-----	0.20		
	28	---	---	---	---	---	-----	---		
BtE*:										
Berkshire-----	0-3	3-10	1.10-1.15	0.6-6.0	0.06-0.22	3.6-6.0	Low-----	0.20	3	2-5
	3-23	3-10	1.15-1.30	0.6-6.0	0.10-0.20	3.6-6.0	Low-----	0.24		
	23-60	1-10	1.30-1.60	0.6-6.0	0.10-0.18	3.6-6.0	Low-----	0.20		
Marlow-----	0-24	3-10	1.00-1.30	0.6-2.0	0.10-0.23	3.6-6.0	Low-----	0.24	3	2-8
	24-35	3-10	1.30-1.60	0.6-2.0	0.06-0.20	3.6-6.0	Low-----	0.43		
	35-60	3-10	1.60-2.05	0.06-0.6	0.05-0.12	3.6-6.0	Low-----	0.17		
BuB, BuC, BuD----	0-10	10-25	1.00-1.30	0.6-2.0	0.22-0.30	4.5-6.5	Low-----	0.28	3	3-6
Boothbay	10-30	18-35	1.20-1.50	0.06-0.6	0.14-0.22	4.5-7.3	Low-----	0.49		
	30-60	18-35	1.60-1.80	0.06-0.6	0.10-0.20	5.6-7.3	Low-----	0.55		
Bx*, By*.										
Borohemists										
CoB*, CoC*, CoD*, CoE*:										
Colton-----	0-4	1-5	1.10-1.40	>6.0	0.03-0.12	3.6-5.0	Low-----	0.17	3	3-8
	4-27	0-5	1.25-1.55	>6.0	0.02-0.05	4.5-5.5	Low-----	0.17		
	27-60	0-3	1.45-1.65	>20	0.01-0.02	4.5-6.0	Low-----	0.17		

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay <2mm	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cm <sup>3</sup>	In/hr	In/in	pH				Pct
CoB*, CoC*, CoD*, CoE*: Duxbury-----	0-5	1-7	1.00-1.20	2.0-6.0	0.18-0.19	3.6-6.5	Low-----	0.32	3	2-5
	5-16	2-8	0.80-1.20	2.0-6.0	0.18-0.30	3.6-6.5	Low-----	0.49		
	16-25	1-4	1.00-1.40	2.0-6.0	0.10-0.19	4.5-6.5	Low-----	0.28		
	25-60	0-2	1.40-1.70	6.0-20.0	0.01-0.06	4.5-6.5	Low-----	0.17		
CrB-----	0-8	0-5	1.1-1.5	6.0-20	0.05-0.09	4.5-6.0	Low-----	0.17	5	2-9
Croghan	8-28	0-5	1.2-1.5	>20	0.03-0.07	4.5-6.0	Low-----	0.17		
	28-60	0-5	1.2-1.5	>20	0.03-0.06	4.5-6.0	Low-----	0.17		
FrB*: Fraglaquepts. Haplaquepts.										
Ha-----	0-7	8-18	1.15-1.40	0.6-2.0	0.18-0.21	5.1-7.3	Low-----	0.49	5	3-6
Hamlin	7-16	3-10	1.25-1.55	0.6-2.0	0.17-0.19	5.1-7.3	Low-----	0.49		
	16-60	3-10	1.25-1.55	0.6-2.0	0.17-0.19	5.6-7.8	Low-----	0.49		
Hs*. Histic Fluvaquents										
Le-----	0-8	1-7	1.10-1.50	0.6-2.0	0.18-0.25	5.1-7.3	Low-----	0.20	3	3-10
Limerick Variant	8-32	1-7	1.10-1.50	0.6-2.0	0.18-0.25	5.1-7.3	Low-----	0.20		
	32-60	1-7	1.20-1.50	0.6-2.0	0.18-0.25	5.1-7.3	Low-----	0.20		
LoE*: Londonderry----	4-0	---	---	2.0-6.0	0.20-0.40	3.6-5.0	Low-----	0.49	---	---
	0-5	2-7	1.10-1.30	0.2-0.6	0.14-0.20	4.5-5.5	Low-----	0.43		
	5	---	---	---	---	---	---	---		
Stratton-----	0-4	2-7	0.80-1.50	0.6-6.0	0.18-0.24	3.6-5.0	Low-----	0.24	2	---
	4-15	4-12	0.60-1.10	0.6-6.0	0.36-0.43	3.6-5.0	Low-----	0.64		
	15	---	---	---	---	---	---	---		
LyB*, LyC*, LyD*, LyE*: Lyman-----	0-2	2-10	0.75-1.20	2.0-6.0	0.08-0.25	3.6-6.0	Low-----	0.28	2	1-4
	2-12	2-10	0.90-1.40	2.0-6.0	0.08-0.28	3.6-6.0	Low-----	0.32		
	12	---	---	---	---	---	---	---		
Tunbridge-----	0-3	5-9	0.80-1.20	2.0-6.0	0.12-0.18	3.6-5.5	Low-----	0.20	2	3-6
	3-14	3-9	1.20-1.40	2.0-6.0	0.10-0.16	3.6-6.0	Low-----	0.20		
	14-28	3-7	1.20-1.50	0.6-6.0	0.10-0.14	3.6-6.5	Low-----	0.20		
	28	---	---	---	---	---	---	---		
MaB, MaC, MaD-----	0-24	3-10	1.00-1.30	0.6-2.0	0.10-0.23	3.6-6.0	Low-----	0.24	3	2-8
Marlow	24-35	3-10	1.30-1.60	0.6-2.0	0.06-0.20	3.6-6.0	Low-----	0.43		
	35-60	3-10	1.60-2.05	0.06-0.6	0.05-0.12	3.6-6.0	Low-----	0.17		
MrB, MrC, MrD-----	0-24	3-10	1.00-1.30	0.6-2.0	0.10-0.23	3.6-6.0	Low-----	0.20	3	2-8
Marlow	24-35	3-10	1.30-1.60	0.6-2.0	0.06-0.20	3.6-6.0	Low-----	0.43		
	35-60	3-10	1.60-2.05	0.06-0.6	0.05-0.12	3.6-6.0	Low-----	0.17		
On-----	0-6	1-9	1.15-1.40	2.0-6.0	0.12-0.26	4.5-6.5	Low-----	0.24	5	3-7
Ondawa	6-40	1-9	1.15-1.45	2.0-6.0	0.12-0.22	4.5-6.5	Low-----	0.43		
	40-60	0-3	1.30-1.50	2.0-20	0.04-0.13	4.5-6.5	Low-----	0.20		
PaA-----	7-0	---	---	2.0-6.0	0.25-0.40	5.6-7.3	Low-----	---	---	---
Peacham	0-4	3-8	1.30-1.70	0.6-2.0	0.08-0.21	5.6-7.3	Low-----	---		
	4-60	5-8	1.70-1.90	<0.06	0.05-0.11	5.6-7.3	Low-----	---		
PeB, PeC, PeD-----	0-8	3-10	1.00-1.30	0.6-2.0	0.10-0.23	3.6-6.0	Low-----	0.24	3	2-8
Peru	8-28	3-10	1.30-1.60	0.6-2.0	0.06-0.20	3.6-6.0	Low-----	0.43		
	28-60	3-10	1.60-2.05	0.06-0.6	0.05-0.12	3.6-6.0	Low-----	0.17		

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay <2mm	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cm <sup>3</sup>	In/hr	In/in	pH				Pct
PfB, PfC, PfD----	0-8	3-10	1.00-1.30	0.6-2.0	0.10-0.23	3.6-6.0	Low-----	0.24	3	---
Peru	8-28	3-10	1.30-1.60	0.6-2.0	0.06-0.20	3.6-6.0	Low-----	0.43		
	28-60	3-10	1.60-2.05	0.06-0.6	0.05-0.12	3.6-6.0	Low-----	0.17		
Po-----	0-11	1-9	1.15-1.40	2.0-6.0	0.12-0.24	4.5-6.5	Low-----	0.24	5	3-8
Podunk	11-32	1-9	1.15-1.45	2.0-6.0	0.12-0.18	4.5-6.5	Low-----	0.43		
	32-60	0-3	1.30-1.50	2.0-20	0.04-0.13	4.5-6.5	Low-----	0.20		
PtB, PtC, PtD----	0-8	2-10	1.1-1.4	0.6-2.0	0.15-0.21	3.6-6.0	Low-----	0.49	3	5-10
Potsdam	8-22	2-10	1.2-1.5	0.6-2.0	0.14-0.20	4.5-6.0	Low-----	0.64		
	22-60	2-10	1.7-2.0	0.06-0.2	0.04-0.10	4.5-6.0	Low-----	0.28		
RkE-----	0-4	---	0.07-0.30	2.0-6.0	0.35-0.45	3.6-4.4	Low-----	---	---	---
Ricker	4-7	---	0.15-0.60	2.0-6.0	0.35-0.45	3.6-4.4	Low-----	---		
	7-9	3-8	1.10-1.30	0.6-2.0	0.08-0.16	3.6-5.0	Low-----	0.49		
	9	---	---	---	---	---	---	---		
Ru-----	0-10	1-9	1.10-1.35	2.0-6.0	0.12-0.20	4.5-6.5	Low-----	0.24	5	4-8
Rumney	10-35	1-9	1.15-1.45	2.0-6.0	0.12-0.19	4.5-6.5	Low-----	0.43		
	35-60	0-3	1.30-1.50	>6.0	0.04-0.13	4.5-6.5	Low-----	0.20		
SaB, SaB2, SaC, SaC2, SaD, SaD2, SaE2-----	0-7	2-18	0.90-1.50	0.6-2.0	0.13-0.30	3.6-6.0	Low-----	0.49	3	2-6
Salmon	7-26	2-18	1.10-1.50	0.6-2.0	0.12-0.26	3.6-6.0	Low-----	0.64		
	26-60	2-18	1.45-1.65	0.6-2.0	0.12-0.26	5.1-6.5	Low-----	0.64		
SdC*, SdD*, SdE*: Salmon Variant--	0-4	1-8	0.90-1.50	2.0-6.0	0.16-0.22	4.5-5.5	Low-----	0.49	3	3-8
	4-22	1-8	1.10-1.50	0.6-2.0	0.15-0.20	4.5-5.5	Low-----	0.49		
	22-30	1-5	1.45-1.65	2.0-6.0	0.15-0.20	5.1-6.0	Low-----	0.49		
	30	---	---	---	---	---	---	---		
Salmon-----	0-7	2-18	0.90-1.50	0.6-2.0	0.13-0.30	3.6-6.0	Low-----	0.49	3	2-6
	7-26	2-18	1.10-1.50	0.6-2.0	0.12-0.26	3.6-6.0	Low-----	0.64		
	26-60	2-18	1.45-1.65	0.6-2.0	0.12-0.26	5.1-6.5	Low-----	0.64		
SeD, SeE-----	0-9	10-20	1.20-1.40	0.6-2.0	0.14-0.38	5.1-5.5	Low-----	0.49	3	3-6
Scantic Variant	9-13	50-60	1.40-1.50	0.2-0.6	0.14-0.22	5.1-5.5	Moderate----	0.49		
	13-58	50-60	1.40-1.50	0.2-0.6	0.11-0.21	6.1-7.3	Moderate----	0.49		
	58-64	50-60	1.20-1.40	0.2-0.6	0.09-0.21	6.6-7.3	Moderate----	0.49		
Sr-----	14-0	---	0.55-0.75	6.0-20	0.20-0.45	4.5-6.0	-----	---	5	---
Searsport	0-35	1-5	1.15-1.35	>6.0	0.01-0.13	4.5-6.0	Low-----	0.17		
	35-60	0-2	1.35-1.55	>6.0	0.01-0.13	4.5-6.0	Low-----	0.17		
StC*: Stratton-----	0-4	2-7	0.80-1.50	0.6-6.0	0.18-0.24	3.6-5.0	Low-----	0.24	2	---
	4-15	4-12	0.60-1.10	0.6-6.0	0.36-0.43	3.6-5.0	Low-----	0.64		
	15	---	---	---	---	---	---	---		
Londonderry-----	4-0	---	---	2.0-6.0	0.20-0.40	3.6-5.0	Low-----	0.49	---	---
	0-5	2-7	1.10-1.30	0.2-0.6	0.14-0.20	4.5-5.5	Low-----	0.43		
	5	---	---	---	---	---	---	---		
SwA-----	0-6	10-35	1.00-1.30	0.6-2.0	0.22-0.30	4.5-7.3	Low-----	0.28	3	3-6
Swanville	6-33	18-35	1.20-1.50	0.06-0.6	0.14-0.22	4.5-7.3	Low-----	0.49		
	33-60	18-35	1.60-1.80	0.06-0.6	0.10-0.20	5.6-7.3	Low-----	0.55		
Te-----	0-15	8-18	1.15-1.40	0.6-2.0	0.18-0.21	5.1-7.3	Low-----	0.49	3	2-6
Teel	15-43	5-18	1.15-1.45	0.6-2.0	0.17-0.19	5.1-7.8	Low-----	0.49		
	43-60	3-10	1.25-1.55	0.6-2.0	0.12-0.19	5.6-7.8	Low-----	0.49		

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay <2mm	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cm <sup>3</sup>	In/hr	In/in	pH				Pct
TuB*, TuC*, TuD*, TuE*: Tunbridge-----	0-3 3-14 14-28 28	5-9 3-9 3-7 ---	0.80-1.20 1.20-1.40 1.20-1.50 ---	2.0-6.0 2.0-6.0 0.6-6.0 ---	0.12-0.18 0.10-0.16 0.10-0.14 ---	3.6-5.5 3.6-6.0 3.6-6.5 ---	Low----- Low----- Low----- -----	0.20 0.20 0.20 ---	2	3-6
Lyman-----	0-2 2-12 12	2-10 2-10 ---	0.75-1.20 0.90-1.40 ---	2.0-6.0 2.0-6.0 ---	0.08-0.25 0.08-0.28 ---	3.6-6.0 3.6-6.0 ---	Low----- Low----- -----	0.28 0.32 ---	2	1-4
Ud*. Udifluvents										
WaA----- Walpole	0-4 4-11 11-60	2-6 2-6 0-2	1.00-1.25 1.30-1.55 1.40-1.65	2.0-6.0 2.0-6.0 >6.0	0.10-0.23 0.07-0.18 0.01-0.13	4.5-6.0 4.5-6.0 4.5-6.0	Low----- Low----- Low-----	0.20 0.24 0.10	3	2-8

\* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 16.--SOIL AND WATER FEATURES

[The definitions of "flooding" and "water table" in the text explain terms such as "rare," "brief," "apparent," and "perched."  
The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern]

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					<u>Ft</u>			<u>In</u>				
AdB, AdC, AdD, AdE----- Adams	A	None-----	---	---	>6.0	---	---	>60	---	Low-----	Low-----	High.
AeC*, AeD*, AeE*: Adams-----	A	None-----	---	---	>6.0	---	---	>60	---	Low-----	Low-----	High.
Adams Variant----	A	None-----	---	---	>6.0	---	---	20-40	Hard	Low-----	Low-----	High.
AgB----- Allagash	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	Low-----	High.
BeB, BeC, BeD, BkB, BkC, BkD---- Berkshire	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Low-----	High.
BrB*, BrC*, BrD*: Berkshire-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Low-----	High.
Tunbridge-----	C	None-----	---	---	>6.0	---	---	20-40	Hard	Moderate	Low-----	Moderate.
BtE*: Berkshire-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Low-----	High.
Marlow-----	C	None-----	---	---	1.5-2.5	Perched	Nov-Mar	>60	---	Moderate	Low-----	Moderate.
BuB, BuC, BuD----- Boothbay	C	None-----	---	---	1.0-2.0	Apparent	Mar-May	>60	---	High-----	Moderate	Moderate.
Bx*, By*. Borohemists												
CoB*, CoC*, CoD*, CoE*: Colton-----	A	None-----	---	---	>6.0	---	---	>60	---	Low-----	Low-----	High.
Duxbury-----	A	None-----	---	---	>6.0	---	---	>60	---	Low-----	Low-----	Moderate.
CrB----- Croghan	B	None-----	---	---	1.5-2.0	Apparent	Nov-May	>60	---	Moderate	Low-----	High.
FrB*: Fragiaquepts. Haplaquepts.												
Ha----- Hamlin	B	Occasional	Brief-----	Nov-May	3.0-6.0	Apparent	Nov-May	>60	---	High-----	Low-----	Low.

See footnote at end of table.



TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth <u>Pt</u>	Kind	Months	Depth <u>In</u>	Hardness		Uncoated steel	Concrete
Hs*. Histic Fluvaquents												
Le----- Limerick Variant	C	Frequent-----	Brief-----	Apr-Jun	0.5-1.5	Apparent	Nov-Jun	>60	---	High-----	High-----	Low.
LoE*: Londonderry-----	C/D	None-----	---	---	0.5	Perched	---	2-7	Hard	Moderate	Moderate	High.
Stratton-----	C	None-----	---	---	>6.0	---	---	8-20	Hard	Moderate	Very High	High.
LyB*, LyC*, LyD*, LyE*: Lyman-----	C	None-----	---	---	>6.0	---	---	8-20	Hard	Moderate	Low-----	High.
Tunbridge-----	C	None-----	---	---	>6.0	---	---	20-40	Hard	Moderate	Low-----	Moderate.
MaB, MaC, MaD, MrB, MrC, MrD--- Marlow	C	None-----	---	---	1.5-2.5	Perched	Nov-Mar	>60	---	Moderate	Low-----	Moderate.
On----- Ondawa	B	Occasional	Brief-----	Oct-Apr	3.0-6.0	Apparent	Oct-Apr	>60	---	Moderate	Low-----	Moderate.
PaA----- Peacham	D	None-----	---	---	0.0-1.5	Apparent	Oct-Jun	>60	---	High-----	High-----	Low.
PeB, PeC, PeD----- Peru	C	None-----	---	---	1.0-2.0	Perched	Nov-Apr	>60	---	High-----	Moderate	Moderate.
PfB, PfC, PfD----- Peru	C	None-----	---	---	1.0-2.0	Perched	Nov-Apr	>60	---	High-----	Moderate	Moderate.
Po----- Podunk	B	Frequent-----	Brief-----	Nov-May	1.5-3.0	Apparent	Nov-May	>60	---	Moderate	Moderate	Moderate.
PtB, PtC, PtD----- Potsdam	C	None-----	---	---	1.5-2.5	Perched	Nov-May	>60	---	Moderate	Low-----	Moderate.
RkE----- Ricker	D	None-----	---	---	>6.0	---	---	2-26	Hard	Low-----	High-----	High.
Ru----- Rumney	C	Frequent-----	Brief-----	Oct-May	0-1.5	Apparent	Nov-Jun	>60	---	High-----	High-----	High.
SaB, SaB2, SaC, SaC2, SaD, SaD2, SaE2----- Salmon	B	None-----	---	---	>6.0	---	---	>60	---	High-----	Low-----	Moderate.
SdC*, SdD*, SdE*: Salmon Variant---	B	None-----	---	---	>5.0	---	---	20-40	Hard	Low-----	Low-----	High.

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth <u>Ft</u>	Kind	Months	Depth <u>In</u>	Hardness		Uncoated steel	Concrete
SdC*, SdD*, SdE*: Salmon-----	B	None-----	---	---	>6.0	---	---	>60	---	High-----	Low-----	Moderate.
SeD, SeE----- Scantic Variant	C	None-----	---	---	0.5-2.0	Apparent	Oct-Jun	>60	---	High-----	High-----	Moderate.
Sr----- Searsport	D	None-----	---	---	+1-1.0	Apparent	Sep-Jul	>60	---	Moderate	High-----	High.
StC*: Stratton-----	C	None-----	---	---	>6.0	---	---	8-20	Hard	Moderate	High-----	High.
Londonderry-----	C/D	None-----	---	---	0.5	Perched	---	2-7	Hard	Moderate	Moderate	High.
SwA----- Swanville	C	None-----	---	---	0-1.5	Apparent	Oct-Jun	>60	---	High-----	High-----	Low.
Te----- Teel	B	Occasional	Brief-----	Nov-May	0.5-2.0	Apparent	Jan-May	>60	---	High-----	Moderate	Low.
TuB*, TuC*, TuD*, TuE*: Tunbridge-----	C	None-----	---	---	>6.0	---	---	20-40	Hard	Moderate	Low-----	Moderate.
Lyman-----	C	None-----	---	---	>6.0	---	---	8-20	Hard	Moderate	Low-----	High.
Ud*. Udifluvents												
WaA----- Walpole	C	None-----	---	---	0-1.0	Apparent	Nov-Apr	>60	---	High-----	Low-----	High.

\* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 17.--CLASSIFICATION OF THE SOILS

[An asterisk in the first column indicates that the soil is a taxadjunct to the series. See text for a description of those characteristics of the soil that are outside the range of the series]

Soil name	Family or higher taxonomic class
Adams-----	Sandy, mixed, frigid Typic Haplorthods
Adams Variant-----	Sandy, mixed, frigid Typic Haplorthods
Allagash-----	Coarse-loamy over sandy or sandy-skeletal, mixed, frigid Typic Haplorthods
Berkshire-----	Coarse-loamy, mixed, frigid Typic Haplorthods
Boothbay-----	Fine-silty, mixed, frigid Aquic Dystric Eutrochrepts
Borochemists-----	Borochemists
Colton-----	Sandy-skeletal, mixed, frigid Typic Haplorthods
Croghan-----	Sandy, mixed, frigid Aquic Haplorthods
Duxbury-----	Coarse-loamy over sandy or sandy-skeletal, mixed, frigid Typic Haplorthods
Fragiaquepts-----	Fragiaquepts
*Hamlin-----	Coarse-silty, mixed, mesic Dystric Fluventic Eutrochrepts
Haplaquepts-----	Haplaquepts
Histic Fluvaquents-----	Histic Fluvaquents
Limerick Variant-----	Coarse-silty, mixed nonacid, frigid Typic Fluvaquents
Londonderry-----	Loamy, mixed, acid Lithic Cryorthents
Lyman-----	Loamy, mixed, frigid Lithic Haplorthods
Marlow-----	Coarse-loamy, mixed, frigid Typic Fragiorthods
Ondawa-----	Coarse-loamy, mixed, frigid Fluventic Dystrochrepts
Peacham-----	Coarse-loamy, mixed, frigid Humic Fragiaquepts
Peru-----	Coarse-loamy, mixed, frigid Aquic Fragiorthods
Podunk-----	Coarse-loamy, mixed, frigid Fluvaquentic Dystrochrepts
Potsdam-----	Coarse-loamy, mixed, frigid Typic Fragiorthods
Ricker-----	Dysic Lithic Borofolists
Rumney-----	Coarse-loamy, mixed, nonacid, frigid Aeris Fluvaquents
Salmon-----	Coarse-silty, mixed, frigid Typic Haplorthods
Salmon Variant-----	Coarse-silty, mixed, frigid Typic Haplorthods
Scantic Variant-----	Fine, mixed, nonacid, frigid Typic Haplaquepts
Searsport-----	Mixed, frigid Typic Psammaquents
Stratton-----	Thixotropic-skeletal Lithic Cryorthods
Swanville-----	Fine-silty, mixed, nonacid, frigid Aeris Haplaquepts
*Teel-----	Coarse-silty, mixed, mesic Fluvaquentic Eutrochrepts
Tunbridge-----	Coarse-loamy, mixed, frigid Typic Haplorthods
Udifluvents-----	Udifluvents
*Walpole-----	Sandy, mixed, mesic Aeris Haplaquepts



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### LEGEND

- 1 Udfluvients-Ondawa-Rumney-Podunk: Deep, level excessively drained to poorly drained loamy soils; on flood plains
- 2 Adams-Colton-Duxbury: Level to steep, excessively drained and well drained sandy soil; on old beaches, deltas, and terraces
- 3 Boothbay-Salmon-Swanville: Deep, level to steep, well drained to somewhat poorly drained loamy soil; on old lake plains
- 4 Lyman-Tunbridge: Shallow and moderately deep, gently sloping to steep, well drained and somewhat excessively drained loamy soils with bedrock within 40 inches; on the Green Mountains
- 5 Berkshire-Marlow-Peru: Deep, level to steep, well drained to somewhat poorly drained loamy soil; on uplands
- 6 Londonderry-Stratton-Ricker: Shallow and very shallow, sloping to steep, well drained, loamy and organic soils; on the upper slopes of the Green Mountains

Compiled 1980

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
VERMONT AGENCY OF ENVIRONMENTAL  
CONSERVATION AND THE VERMONT AGRICULTURAL  
EXPERIMENT STATION

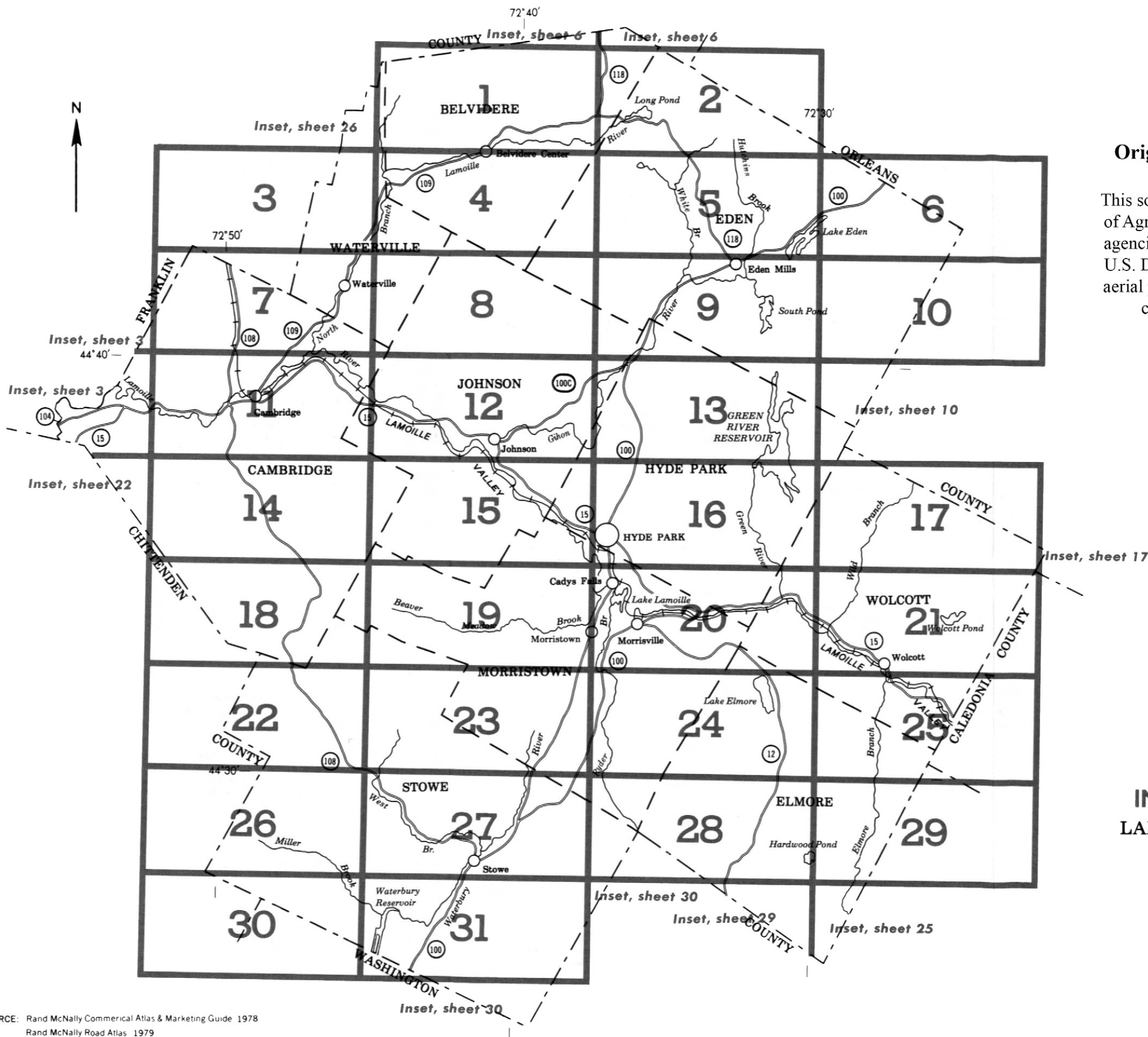
# GENERAL SOIL MAP

## LAMOILLE COUNTY, VERMONT

Scale 1:190,080



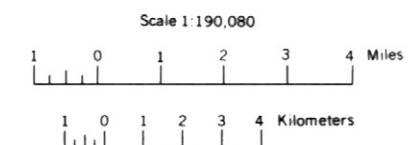




**Original text from each individual map sheet read:**

This soil survey map was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey from 1978 aerial photography. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
**INDEX TO MAP SHEETS**  
**LAMOILLE COUNTY, VERMONT**



CONVENTIONAL AND SPECIAL  
SYMBOLS LEGEND

SOIL LEGEND

The first component, always a capital letter is the initial letter of the soil name. The second component is a lower case letter. The third component, the capital letter A, B, C, D, or E is the slope class. Symbols without a letter for slope class are for nearly level soils. A final number, 2, shows that the soil is eroded.

SYMBOL	NAME	SYMBOL	NAME
AdB	Adams loamy fine sand, 2 to 8 percent slopes	On	Ondawa fine sandy loam
AdC	Adams loamy fine sand, 8 to 15 percent slopes	PaA	Peacham stony muck, 0 to 5 percent slopes
AdD	Adams loamy fine sand, 15 to 25 percent slopes	PeB	Peru fine sandy loam, 3 to 8 percent slopes
AdE	Adams loamy fine sand, 25 to 50 percent slopes	PeC	Peru fine sandy loam, 8 to 15 percent slopes
AeC	Adams-Adams Variant loamy fine sands, rocky, 8 to 15 percent slopes	PeD	Peru fine sandy loam, 15 to 25 percent slopes
AeD	Adams-Adams, Variant loamy fine sands, rocky, 15 to 25 percent slopes	PIB	Peru very stony fine sandy loam, 3 to 8 percent slopes
AeE	Adams-Adams Variant loamy fine sands, rocky, 25 to 50 percent slopes	PIC	Peru very stony fine sandy loam, 8 to 15 percent slopes
AgB	Allagash very fine sandy loam, 2 to 8 percent slopes	PID	Peru very stony fine sandy loam, 15 to 25 percent slopes
BeB	Berkshire fine sandy loam, 3 to 8 percent slopes	Po	Podunk fine sandy loam
BeC	Berkshire fine sandy loam, 8 to 15 percent slopes	PtB	Potsdam silt loam, 3 to 8 percent slopes
BeD	Berkshire fine sandy loam, 15 to 25 percent slopes	PtC	Potsdam silt loam, 8 to 15 percent slopes
BkB	Berkshire very stony fine sandy loam, 3 to 8 percent slopes	PtD	Potsdam silt loam, 15 to 25 percent slopes
BkC	Berkshire very stony fine sandy loam, 8 to 15 percent slopes	RkE	Ricker peat, very rocky, 15 to 80 percent slopes
BkD	Berkshire very stony fine sandy loam, 15 to 25 percent slopes	Ru	Rumney fine sandy loam
BrB	Berkshire-Tunbridge fine sandy loams, rocky, 3 to 8 percent slopes	SaB	Salmon very fine sandy loam, 3 to 8 percent slopes
BrC	Berkshire-Tunbridge fine sandy loams, rocky, 8 to 15 percent slopes	SaB2	Salmon very fine sandy loam, 3 to 8 percent slopes, eroded
BrD	Berkshire-Tunbridge fine sandy loams, rocky, 15 to 25 percent slopes	SaC	Salmon very fine sandy loam, 8 to 15 percent slopes
BtE	Berkshire and Marlow soils, 25 to 50 percent slopes	SaC2	Salmon very fine sandy loam, 8 to 15 percent slopes, eroded
BuB	Boothbay silt loam, 3 to 8 percent slopes	SaD	Salmon very fine sandy loam, 15 to 25 percent slopes
BuC	Boothbay silt loam, 8 to 15 percent slopes	SaD2	Salmon very fine sandy loam, 15 to 25 percent slopes, eroded
BuD	Boothbay silt loam, 15 to 25 percent slopes	SaE2	Salmon very fine sandy loam, 25 to 50 percent slopes, eroded
Bx	Borohemists, deep	SdC	Salmon Variant-Salmon very fine sandy loams, rocky, 8 to 15 percent slopes
By	Borohemists, moderately deep over loamy substratum	SdD	Salmon Variant-Salmon very fine sandy loams, rocky, 15 to 25 percent slopes
CoB	Colton-Duxbury complex, 2 to 8 percent slopes	SdE	Salmon Variant-Salmon very fine sandy loams, rocky, 25 to 50 percent slopes
CoC	Colton-Duxbury complex, 8 to 15 percent slopes	SeD	Scantic Variant boulder silt loam, 8 to 25 percent slopes
CoD	Colton-Duxbury complex, 15 to 25 percent slopes	SeE	Scantic Variant bouldery silt loam, 25 to 50 percent slopes
CoE	Colton-Duxbury complex, 25 to 50 percent slopes	Sr	Searsport muck
CrB	Crogham loamy fine sand, 2 to 8 percent slopes	StC	Stratton-Londonderry complex, 8 to 25 percent slopes
FrB	Fragiaquepts and Haplaquepts, 0 to 8 percent slopes	SwA	Swanville silt loam, 0 to 6 percent slopes
Ha	Hamlin silt loam	Te	Teel silt loam
Hs	Histic Fluvaquents, frequently flooded	TuB	Tunbridge-Lyman fine sandy loams, rocky, 3 to 8 percent slopes
Le	Limerick Variant silt loam	TuC	Tunbridge-Lyman fine sandy loams, rocky, 8 to 15 percent slopes
LoE	Londonderry-Stratton complex, 25 to 60 percent slopes	TuD	Tunbridge-Lyman fine sandy loams, rocky, 15 to 25 percent slopes
LyB	Lyman-Tunbridge fine sandy loams, very rocky, 3 to 8 percent slopes	TuE	Tunbridge-Lyman fine sandy loams, rocky, 25 to 60 percent slopes
LyC	Lyman-Tunbridge fine sandy loams, very rocky, 8 to 15 percent slopes	Ud	Udifluvents, frequently flooded
LyD	Lyman-Tunbridge fine sandy loams, very rocky, 15 to 25 percent slopes	WaA	Walpole fine sandy loam, 0 to 6 percent slopes
LyE	Lyman-Tunbridge fine sandy loams, very rocky, 25 to 60 percent slopes		
MaB	Marlow fine sandy loam, 3 to 8 percent slopes		
MaC	Marlow fine sandy loam, 8 to 15 percent slopes		
MaD	Marlow fine sandy loam, 15 to 25 percent slopes		
MrB	Marlow very stony fine sandy loam, 3 to 8 percent slopes		
MrC	Marlow very stony fine sandy loam, 8 to 15 percent slopes		
MrD	Marlow very stony fine sandy loam, 15 to 25 percent slopes		

CULTURAL FEATURES

BOUNDARIES

National, state or province	
County or parish	
Minor civil division	
Reservation (national forest or park, state forest or park, and large airport)	
Land grant	
Limit of soil survey (label)	
Field sheet matchline & neatline	

AD HOC BOUNDARY (label)

Small airport, airfield, park, oilfield, cemetery, or flood pool	
--	--

STATE COORDINATE TICK

LAND DIVISION CORNERS (sections and land grants)	
--	--

ROADS

Divided (median shown if scale permits)	
Other roads	
Trail	

ROAD EMBLEMS & DESIGNATIONS

Interstate	
Federal	
State	
County, farm or ranch	

RAILROAD

POWER TRANSMISSION LINE (normally not shown)	
--	--

PIPE LINE (normally not shown)	
--------------------------------	--

FENCE (normally not shown)	
----------------------------	--

LEVEES

Without road	
With road	
With railroad	

DAMS

Large (to scale)	
Medium or small	

PITS

Gravel pit	
Mine or quarry	

MISCELLANEOUS CULTURAL FEATURES

Farmstead, house (omit in urban areas)	
Church	
School	
Indian mound (label)	
Located object (label)	
Tank (label)	
Wells, oil or gas	
Windmill	
Kitchen midden	

SPECIAL SYMBOLS FOR  
SOIL SURVEY

SOIL DELINEATIONS AND SYMBOLS	
ESCARPMENTS	
Bedrock (points down slope)	
Other than bedrock (points down slope)	
SHORT STEEP SLOPE	
GULLY	
DEPRESSION OR SINK	
SOIL SAMPLE SITE (normally not shown)	
MISCELLANEOUS	
Blowout	
Clay spot	
Gravelly spot	
Gumbo, slick or scabby spot (sodic)	
Dumps and other sir. .lar non soil areas	
Prominent hill or peak	
Rock outcrop (includes sandstone and shale)	
Saline spot	
Sandy spot	
Severely eroded spot	
Slide or slip (tips point upslope)	
Stony spot, very stony spot	

WATER FEATURES

DRAINAGE

Perennial, double line	
Perennial, single line	
Intermittent	
Drainage end	
Canals or ditches	
Double-line (label)	
Drainage and/or irrigation	

LAKES, PONDS AND RESERVOIRS

Perennial	
Intermittent	

MISCELLANEOUS WATER FEATURES

Marsh or swamp	
Spring	
Well, artesian	
Well, irrigation	
Wet spot	









1 MILE

1 KILOMETER

Scale 1:20,000

1/4

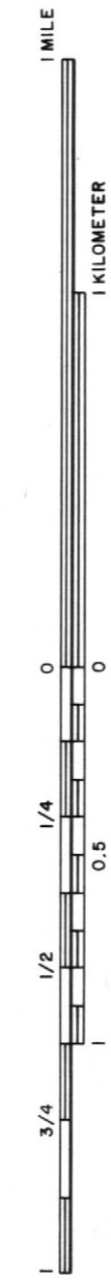
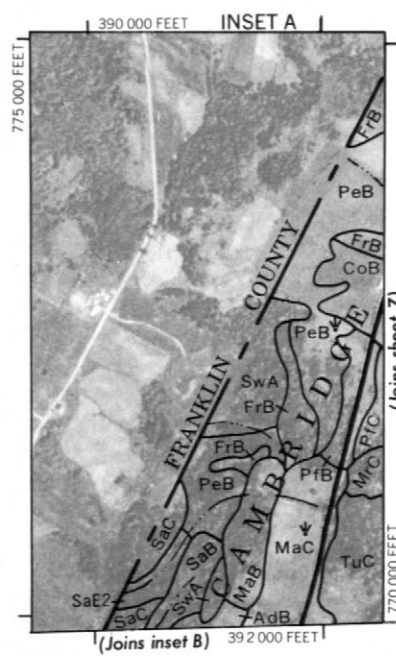
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3/4

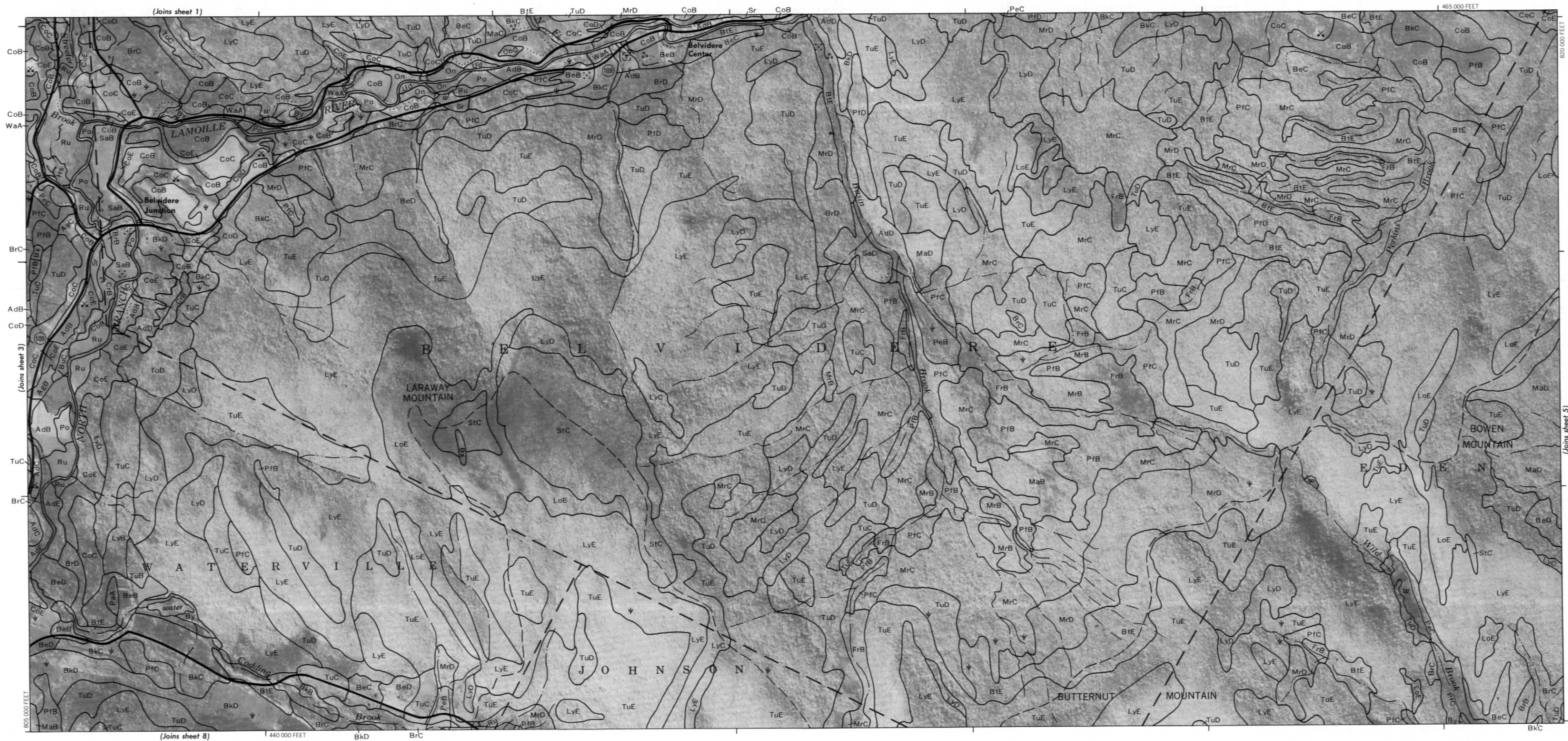
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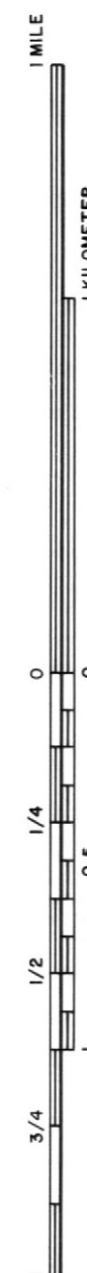












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Scale 1:20 000



VII METER



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Scale 1:20,000



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Scale 1:20,000





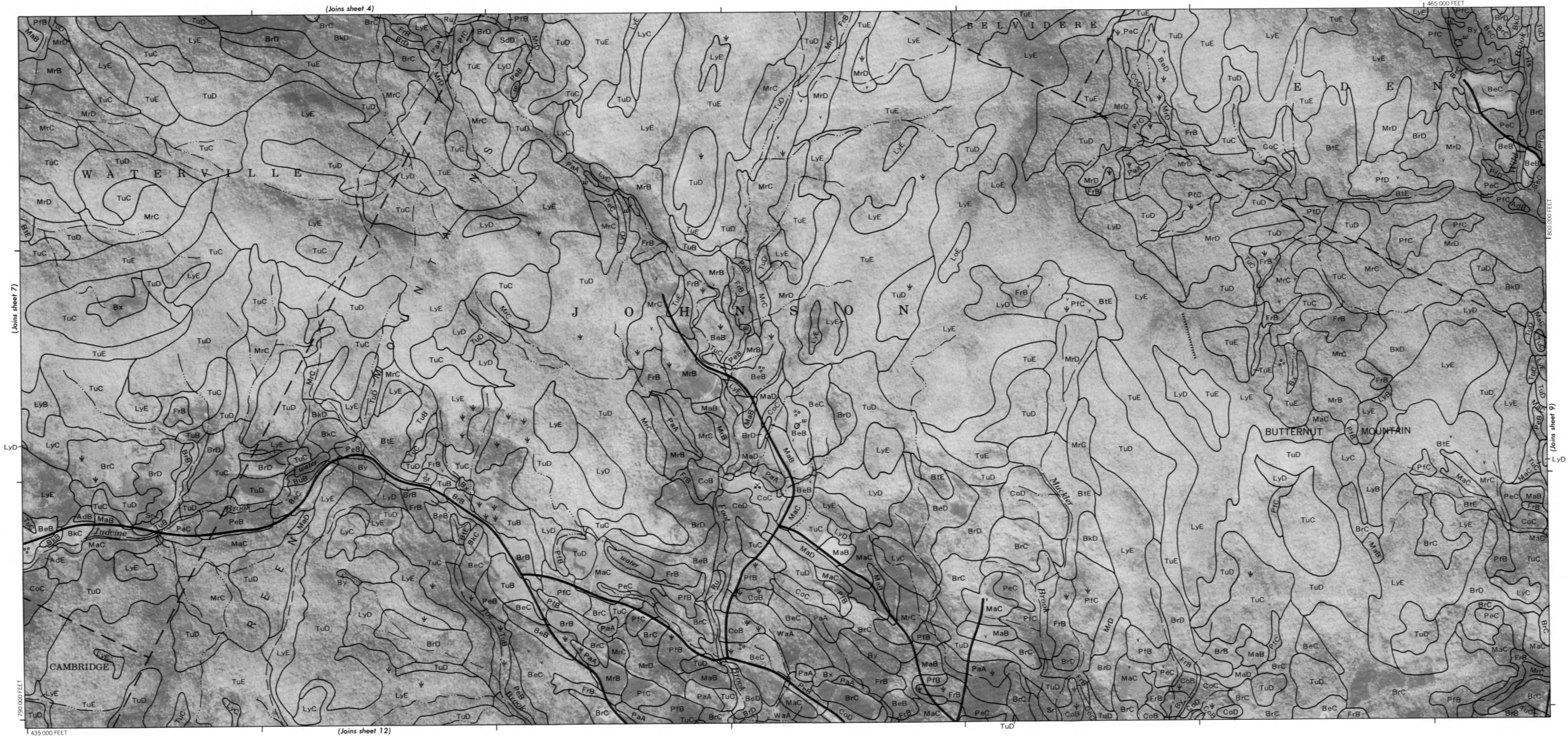


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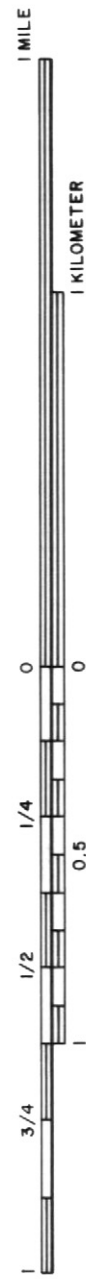
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Scale 1:20,000







Scale 1:20,000



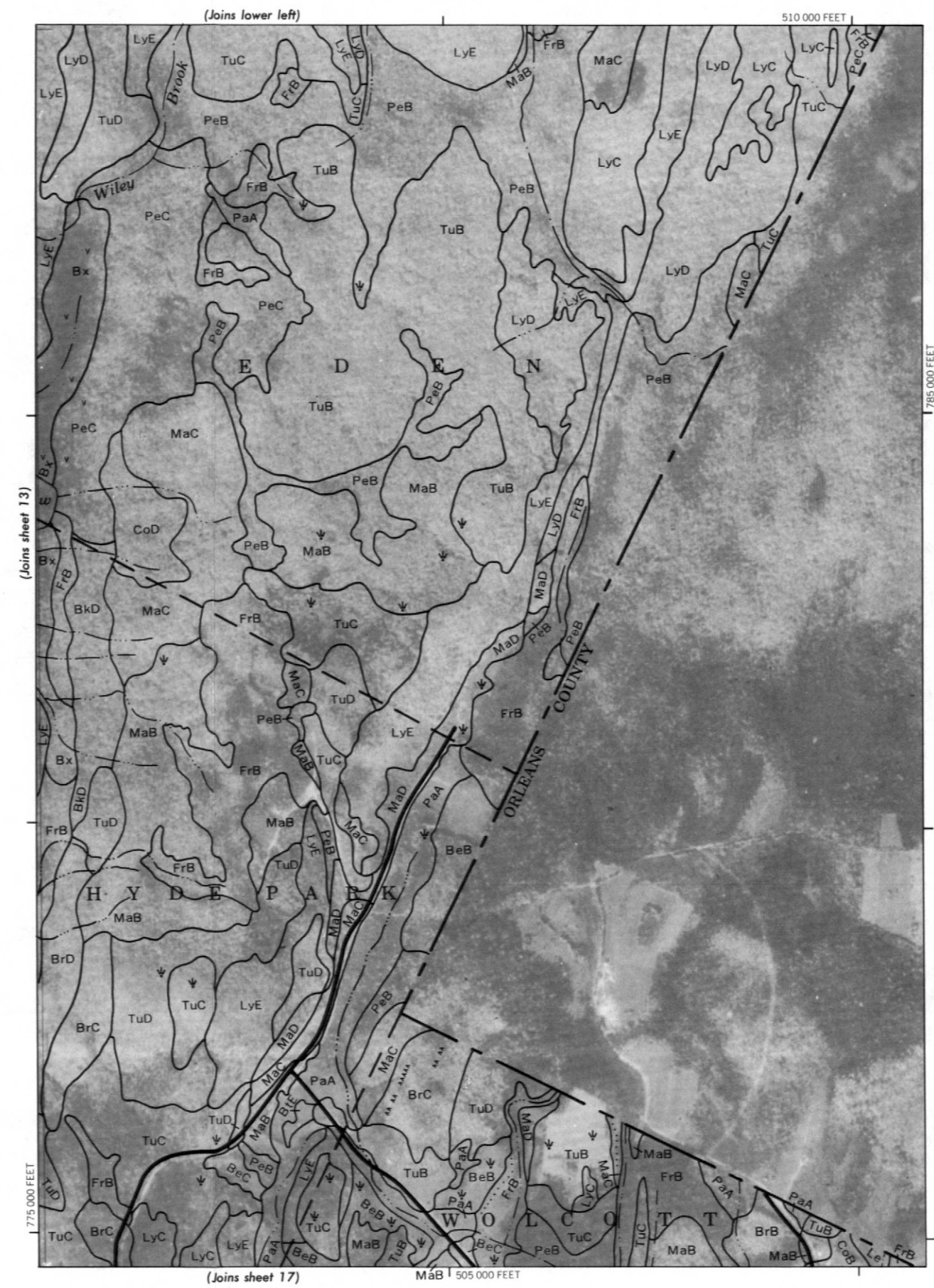
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500 000 FEET





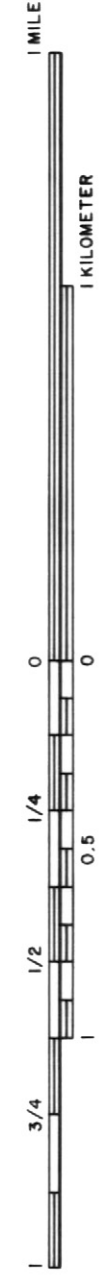


Scale 1:20,000

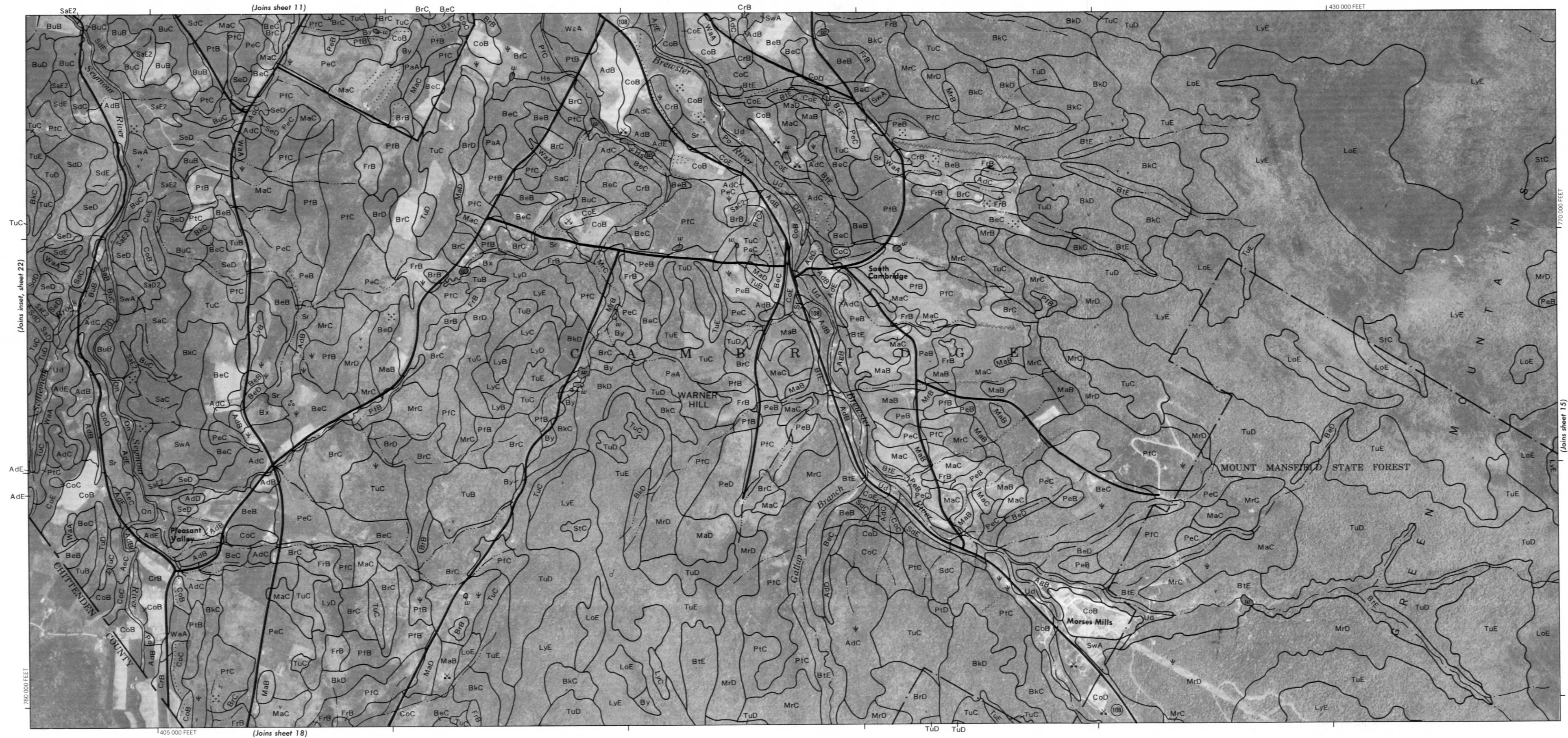
















435 000 FEET  
770 000 FEET  
(Joins sheet 14)  
MOUNT MANSFIELD STATE FOREST

(Joins sheet 12)  
Belding Pond  
French Hill Brook  
Boulley Brook  
Hail Brook  
Waterman Brook  
JACOB BROOK  
MORRISTOWN  
VALLEY RIVER  
HYDE PARK  
760 000 FEET  
(Joins sheet 16)  
(Joins sheet 19)

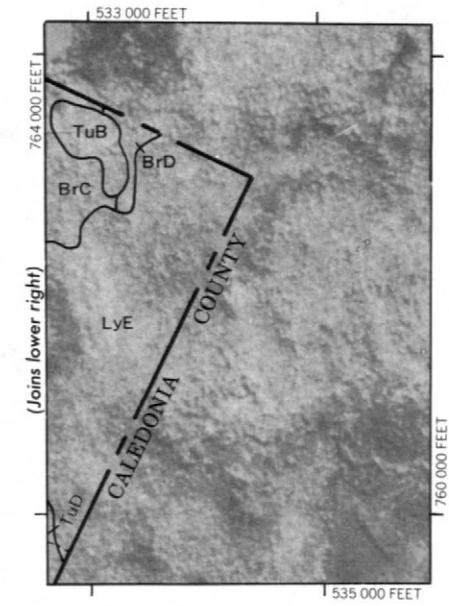
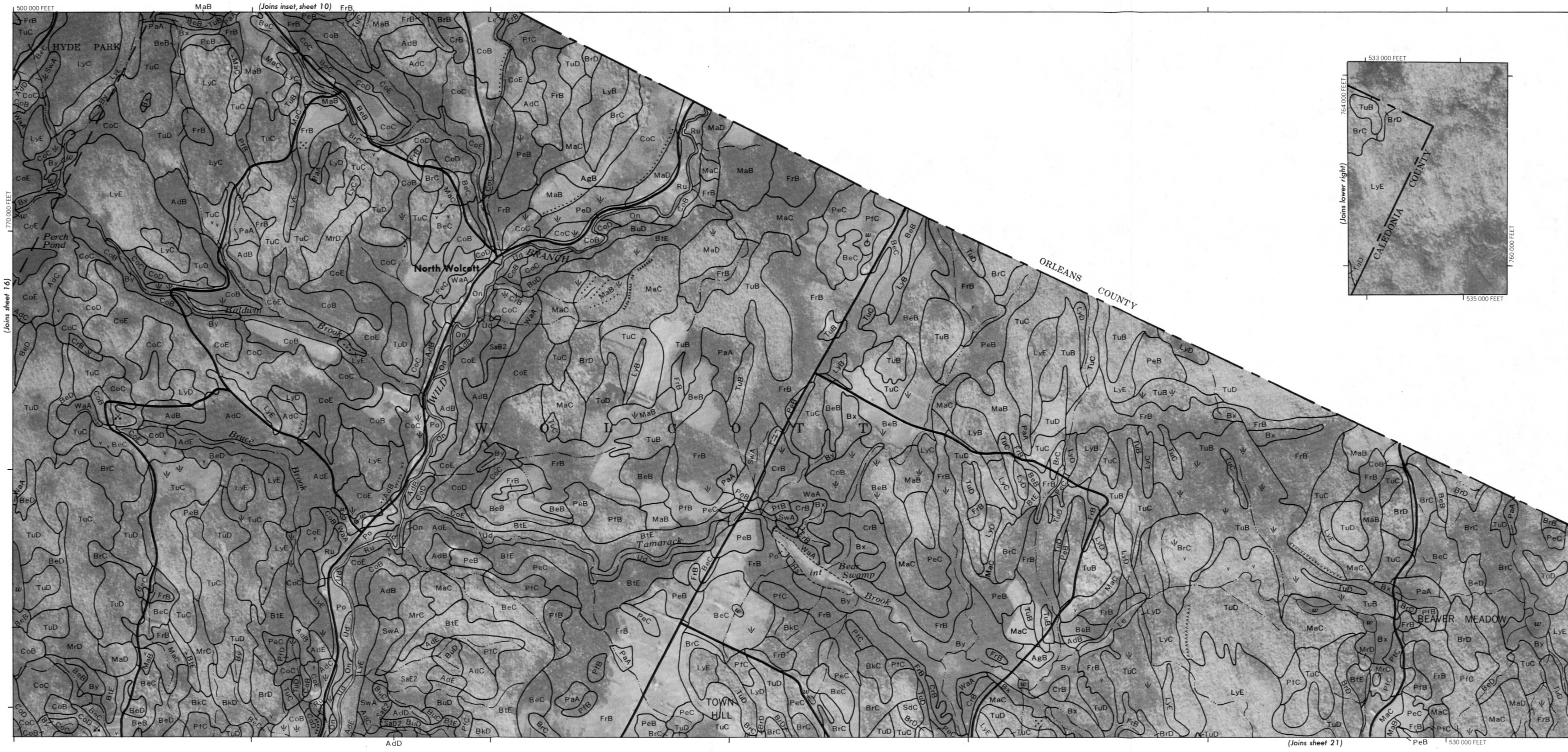








Scale 1:20,000



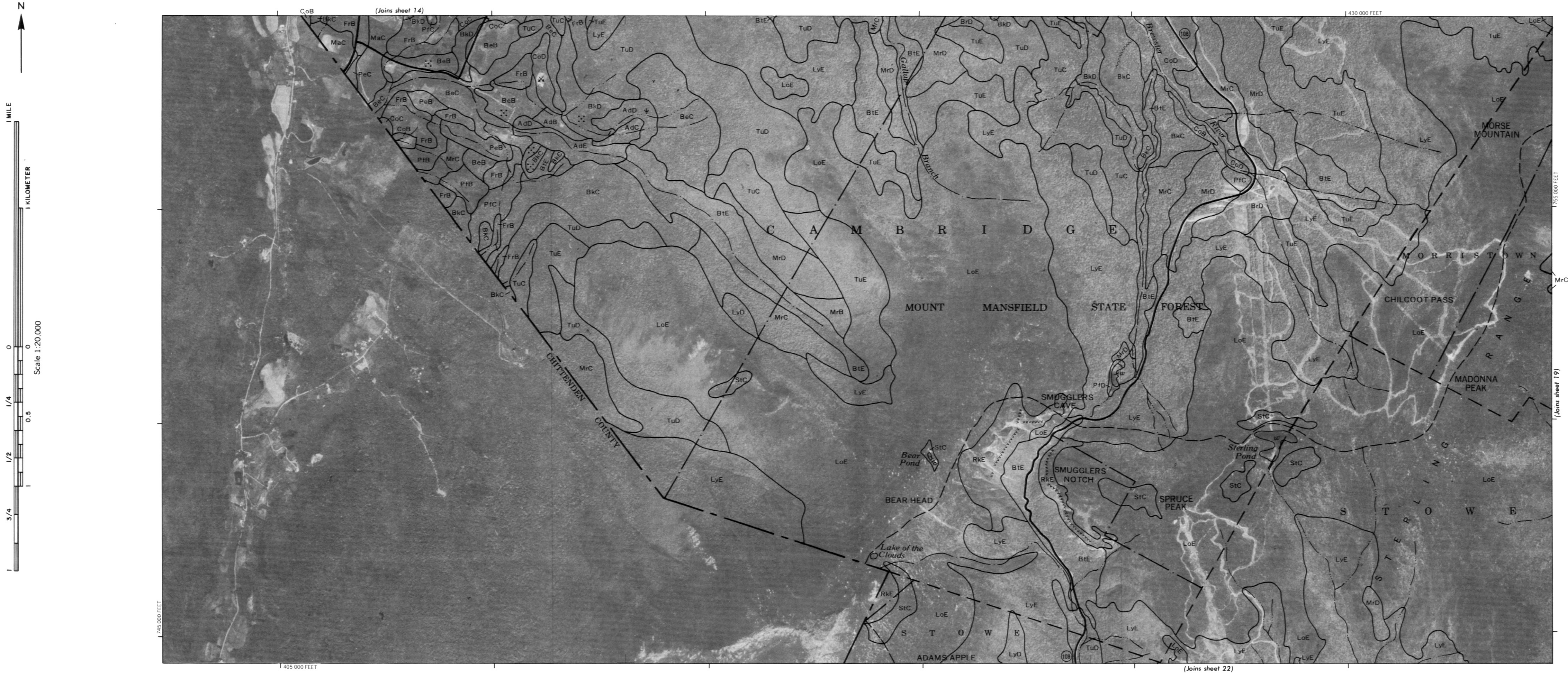
(Joins sheet 16)

(Joins inset, sheet 10)

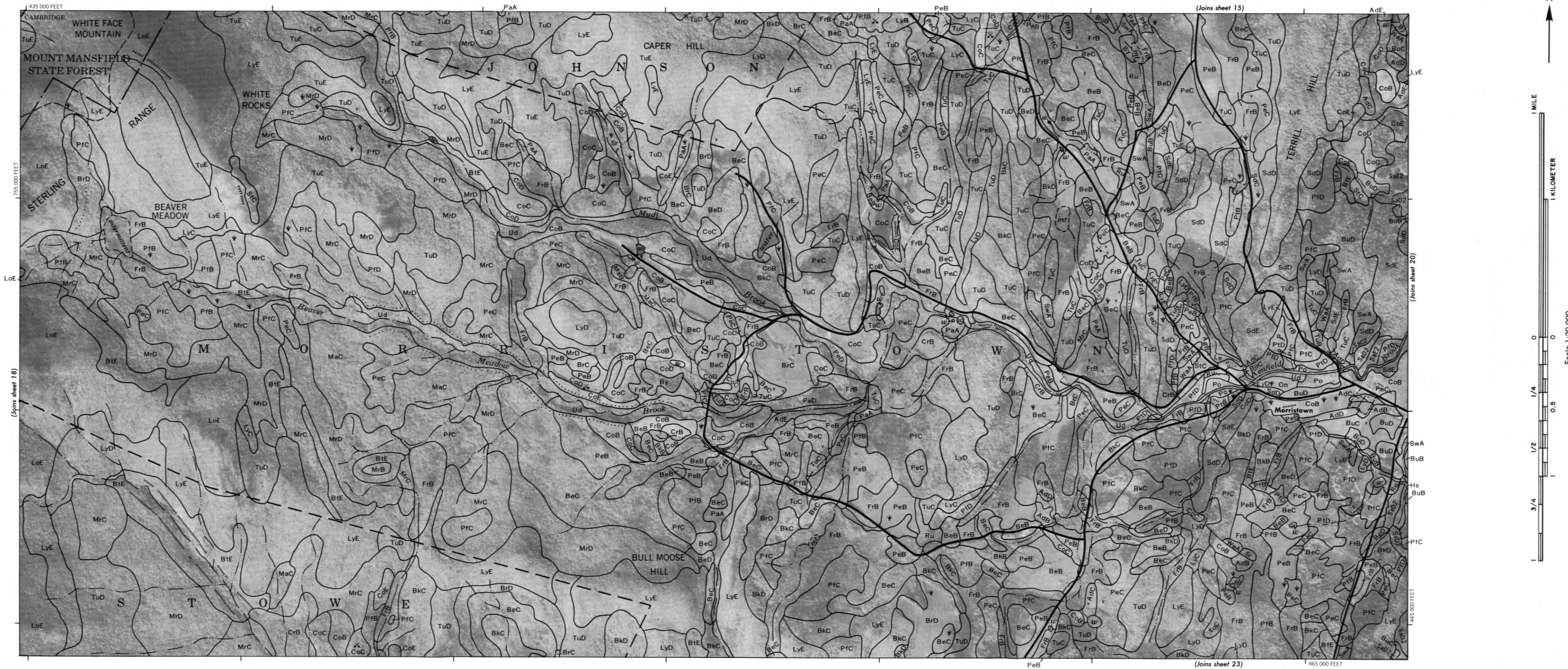
(Joins sheet 21)

(Joins inset)













1 MILE

1 KILOMETER

Scale 1:20,000

0 1/4 1/2 3/4

0 1/4 1/2 3/4

0 1/4 1/2 3/4

0 1/4 1/2 3/4

0 1/4 1/2 3/4

0 1/4 1/2 3/4



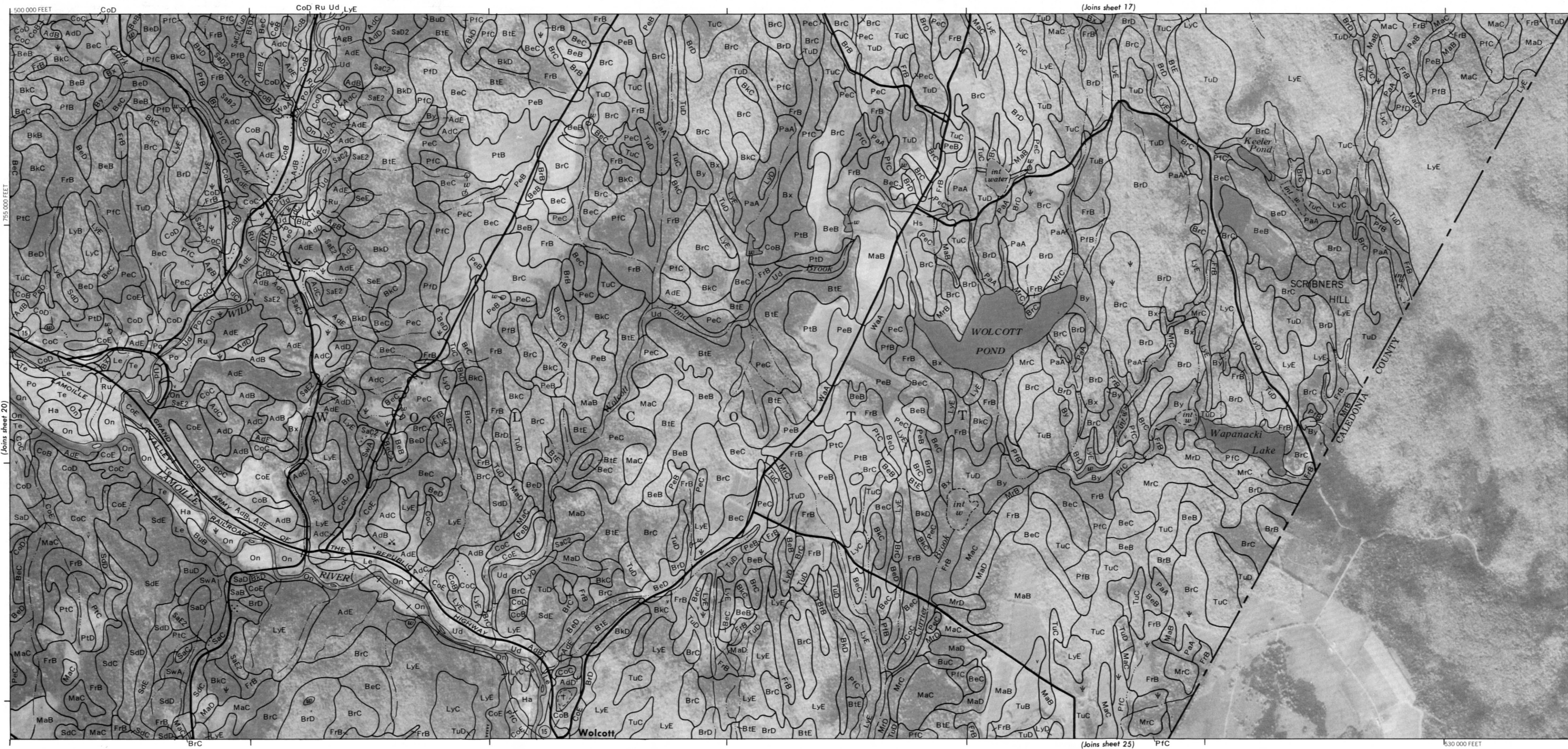




1 MILE

1 KILOMETER

Scale 1:20,000



(Joins sheet 20)

(Joins sheet 17)

(Joins sheet 25)

530 000 FEET





1 MILE

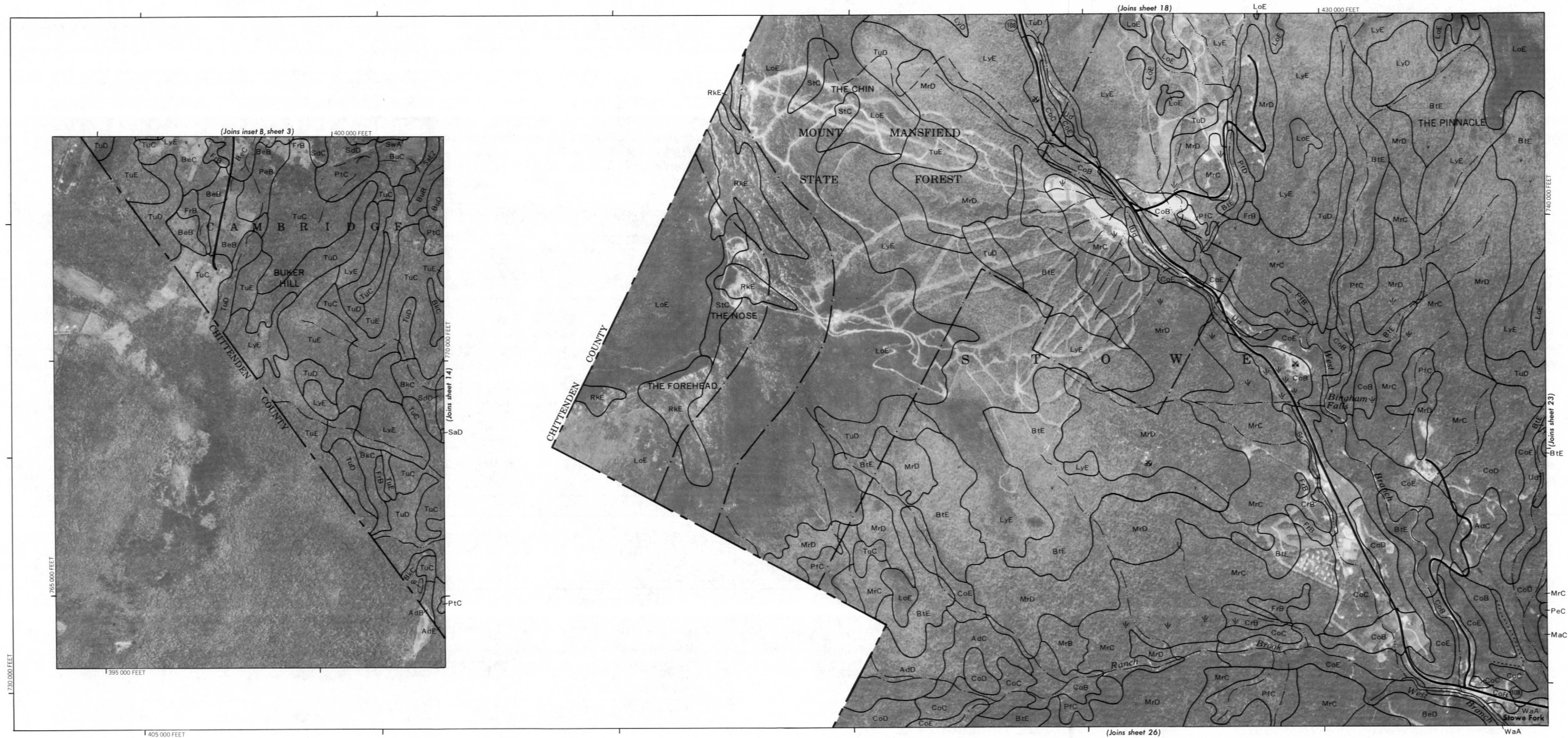
1 KILOMETER

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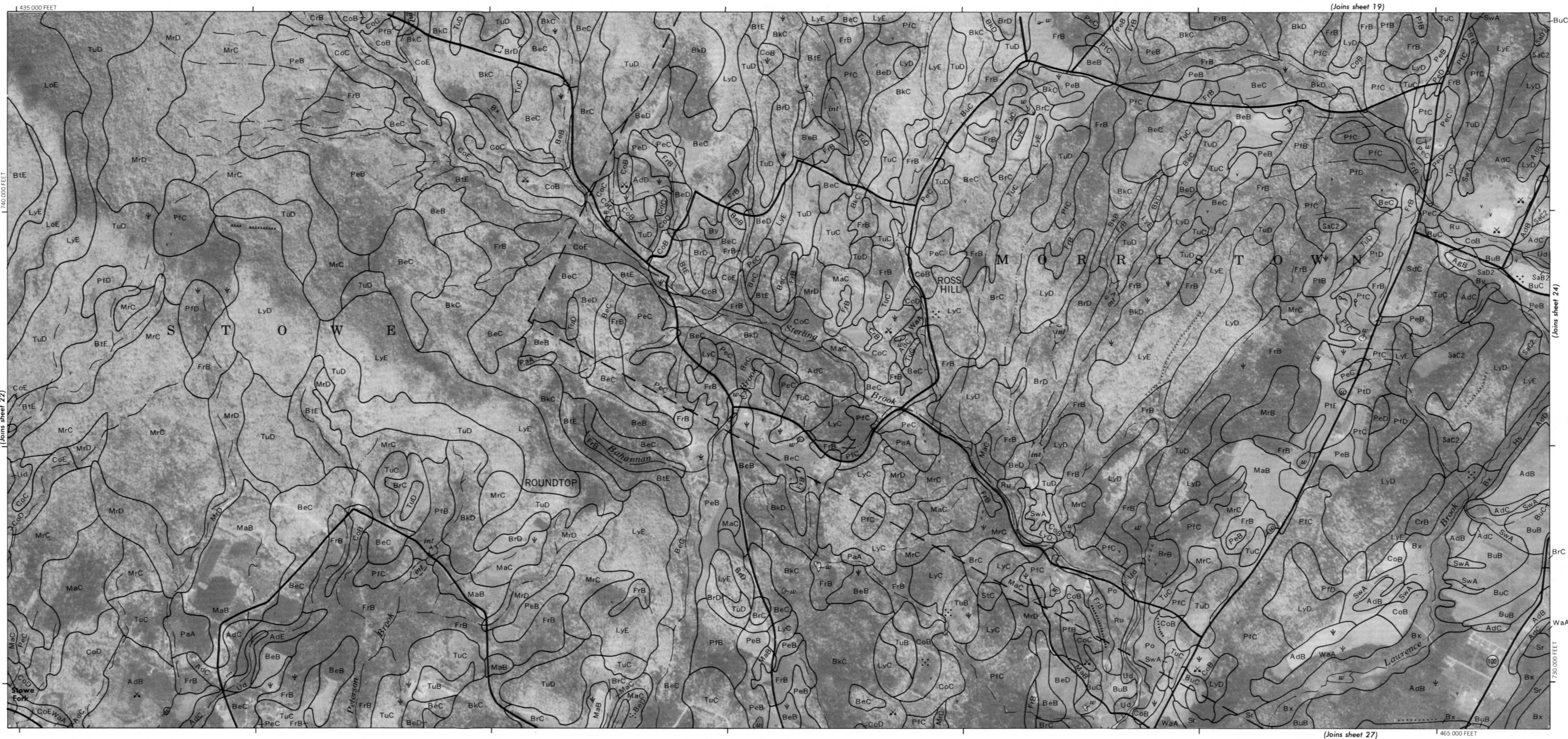
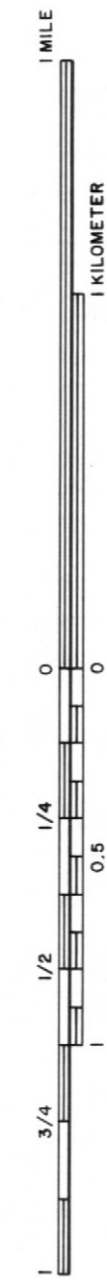
1/4

1/2

3/4



























1 MILE

1 KILOMETER

Scale 1:20,000

0 1/4 1/2 3/4 1

0 0.5 1

3/4 1

1











1 MILE

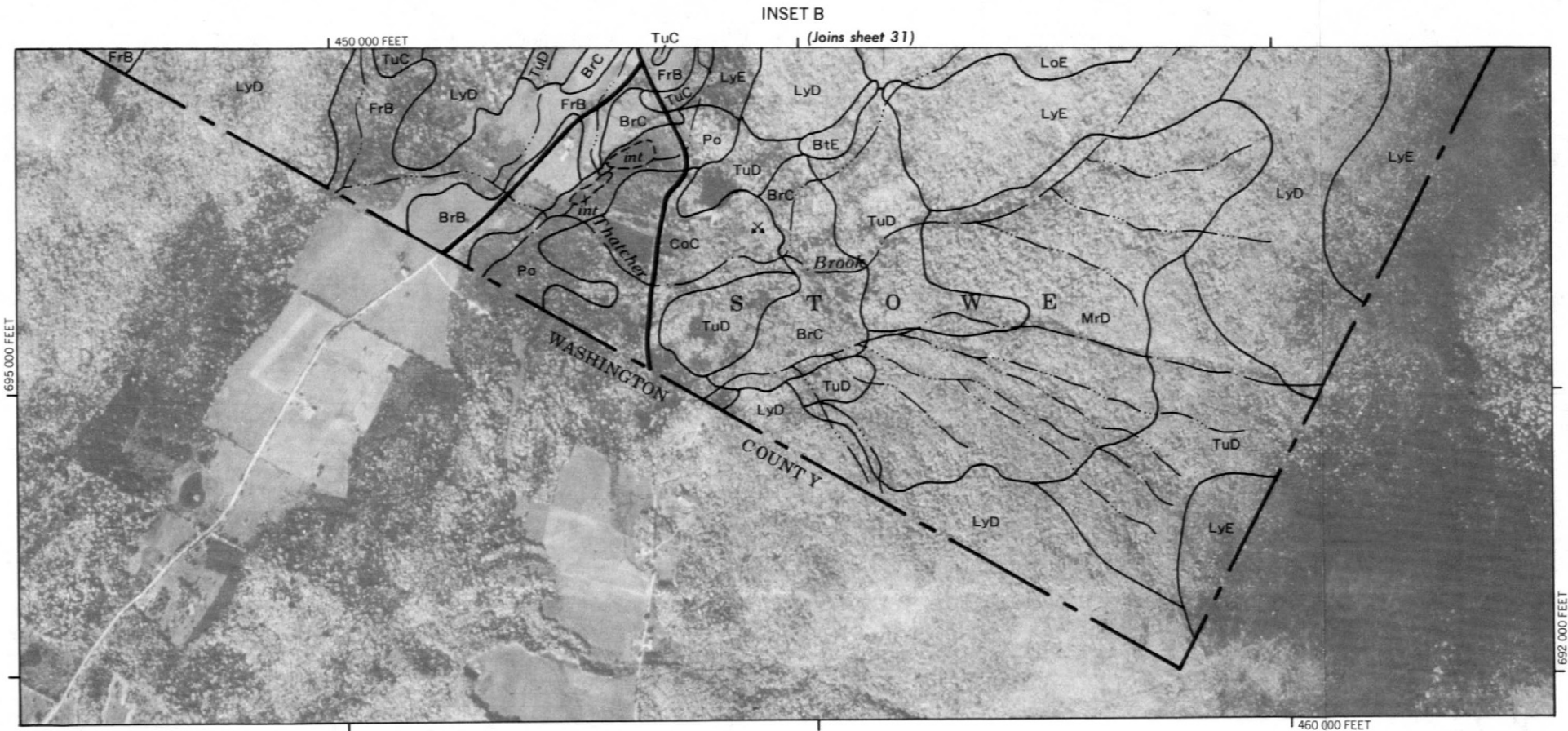
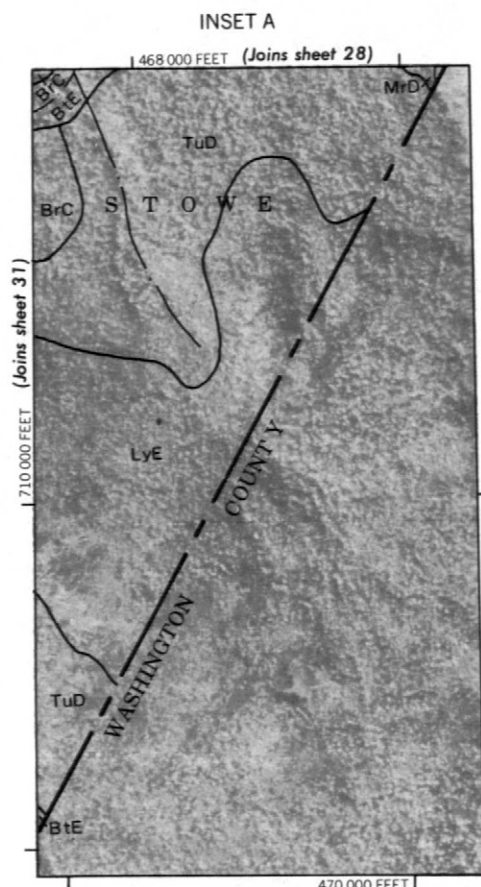
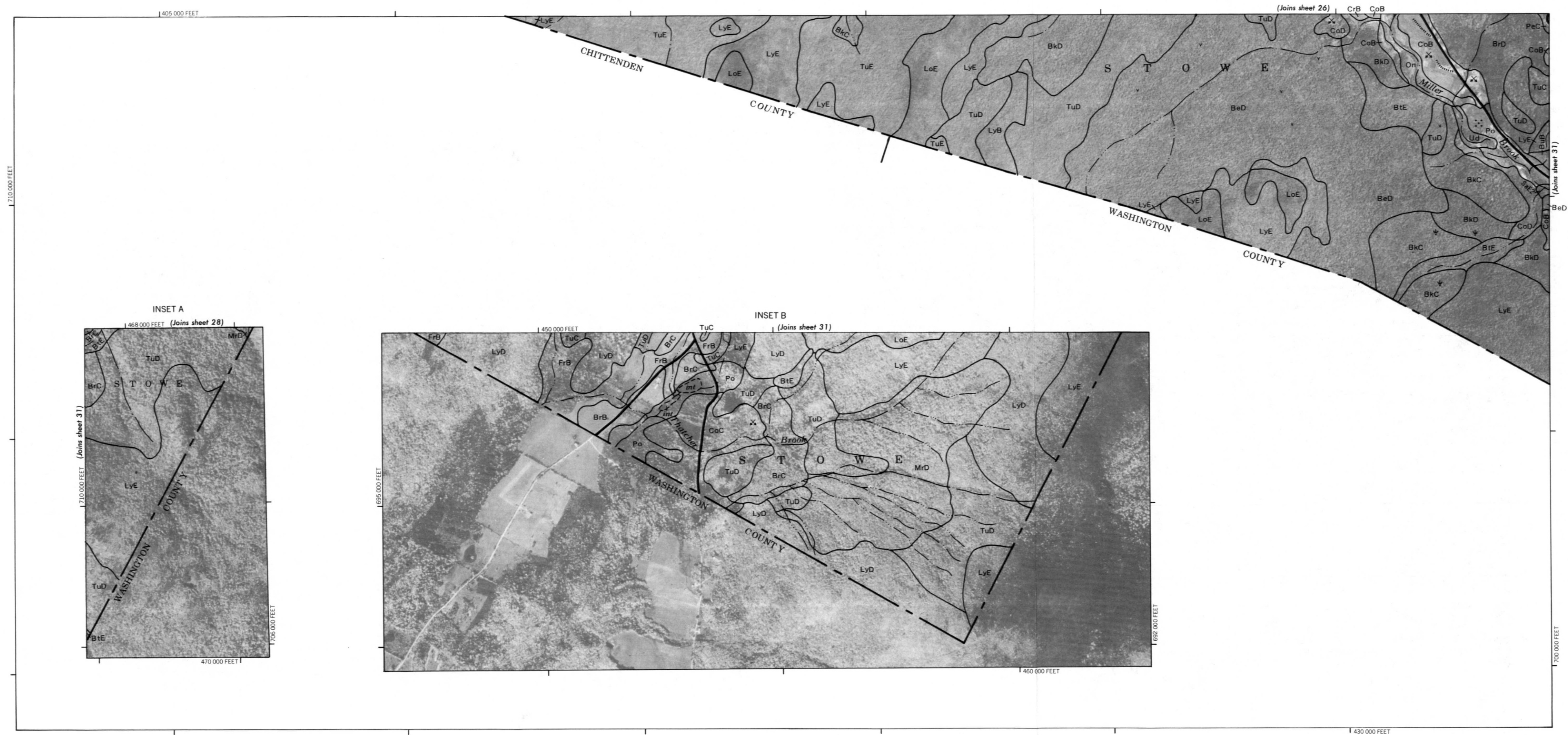
1 KILOMETER

Scale 1:20,000

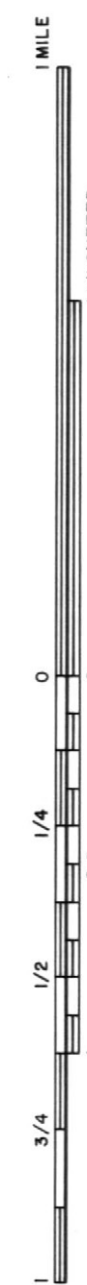
1/4

1/2

3/4







0  
Scale 1:20,000